FLORIDA PUBLIC HEALTH RISK ASSESSMENT TOOL (FPHRAT)

User's Guide

2014

Planning Program
Bureau of Preparedness and Response
Division of Emergency Preparedness and Community Support

Table of Contents

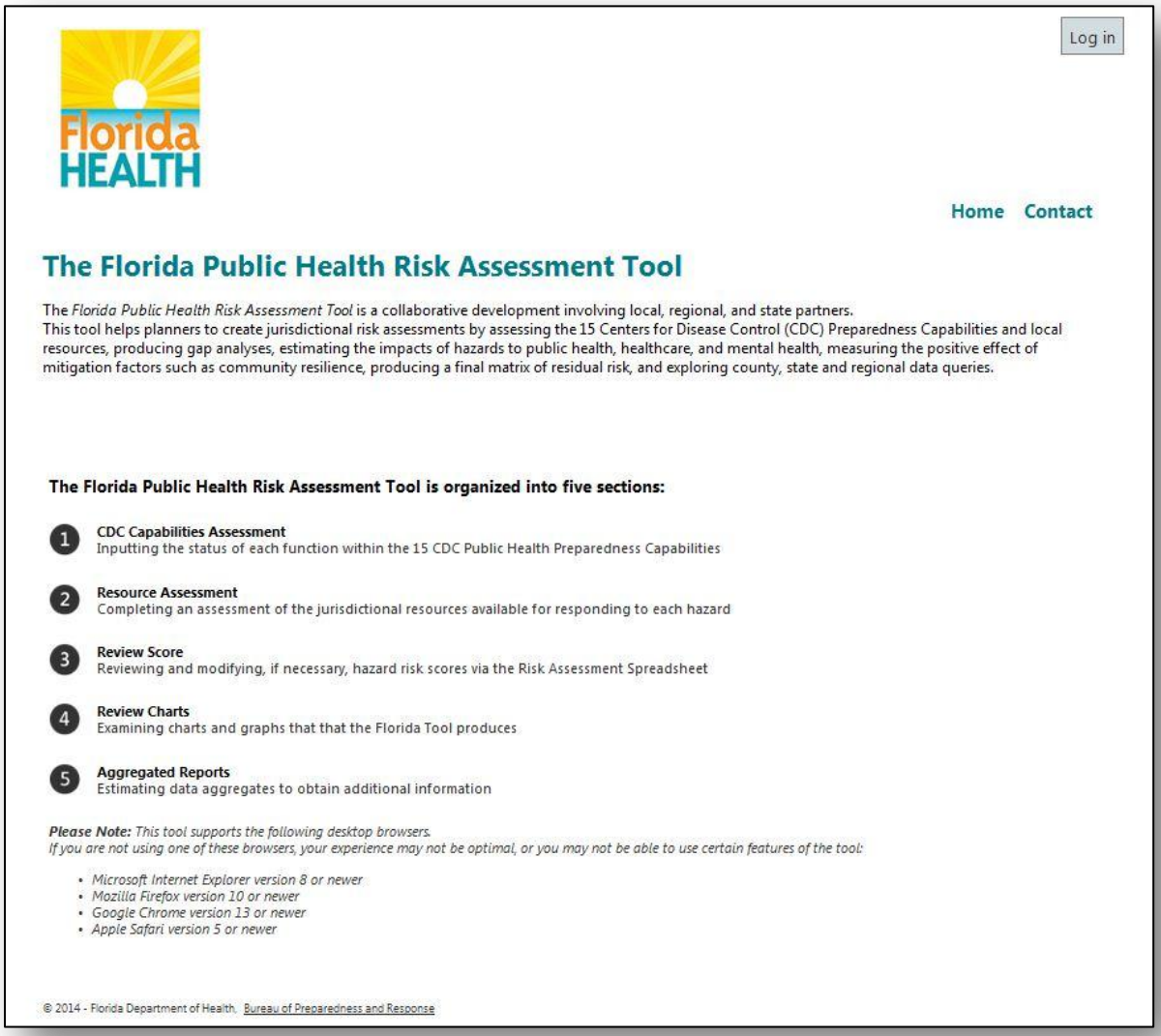
Getting to the Florida Public Health Risk Assessment Tool (FPHRAT) 4
Logging In 5
Using the FPHRAT 8
Capability Assessment 9
Resources Worksheet 18
Risk Assessment 23
Charts and Outputs 25
Saving Charts 30
Open Charts 30
Main Menu 32
Informational Section 33
Hazard Information 33
Risk Assessment Explanation 33
Tool Overview and Demonstration Presentation 33
Social Vulnerability Publication 33
Resilience Publication 33
Entered by Jurisdiction Section 33
Select Jurisdiction 33
Capability Assessment Worksheet 33
Resources Worksheet 33
Finished Product Based on All Inputs. 34
Charts and Outputs 34
Risk Assessment 34
Aggregated Reports 34
Aggregated Reports and Data Interpretation 35
Capability Assessment 35
Capability Assessment Aggregated 36
Capability Assessment Worksheet 37

Capability Gap 38
Capability Gap Aggregated 39
Capability Hazard Component 40
Hazard Risk Index 42
Hazard Risk Index Aggregated 43
Resource Gap (resource readiness gap) 44
Resource Gap Aggregated 45
Resources Worksheet 46
Resources Worksheet Aggregated 47
Risk Assessment 48
Attachment 1. Risk Assessment Explanation 49
Hazard 49
Probability Score (0-5) 49
Social Vulnerability Index (1-4) 49
Critical Infrastructure and Key Resources (1-2) 50
Impact 50
Hazard Risk Index Score (0-24) 52
Capabilities Index Score (1-4) 52
Resources Index Score (1-4) 54
Community Resilience Score (1-4) 54
Residual Risk Index 55

Getting to the Florida Public Health Risk Assessment Tool (FPHRAT)

Getting to the FPHRAT is fairly simple. All you have to do is open up your internet browser and enter the following website URL: https://flphrat.com

After that, you should see the following screen.



Logging In

Your login information is the email address and password created for your county, or the ones that you request.

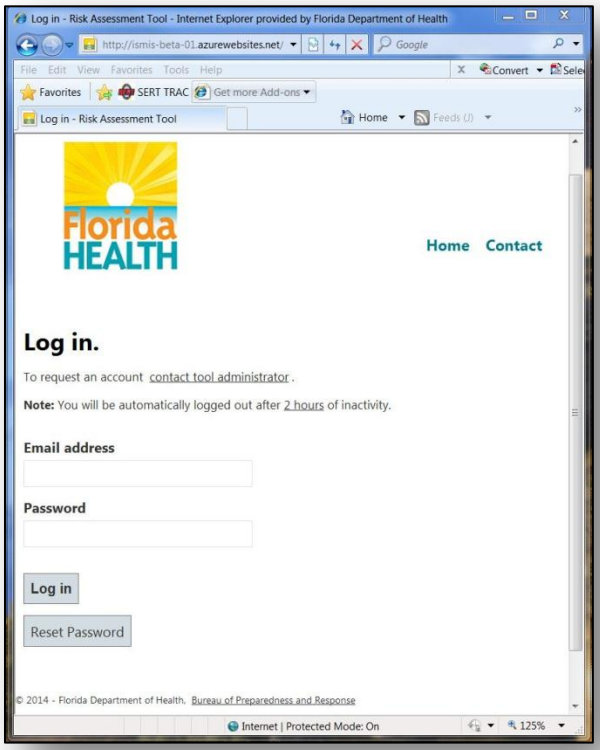
Each County Health Department has been assigned two accounts and corresponding login information:

- Data-input account (default)
- Read-only account

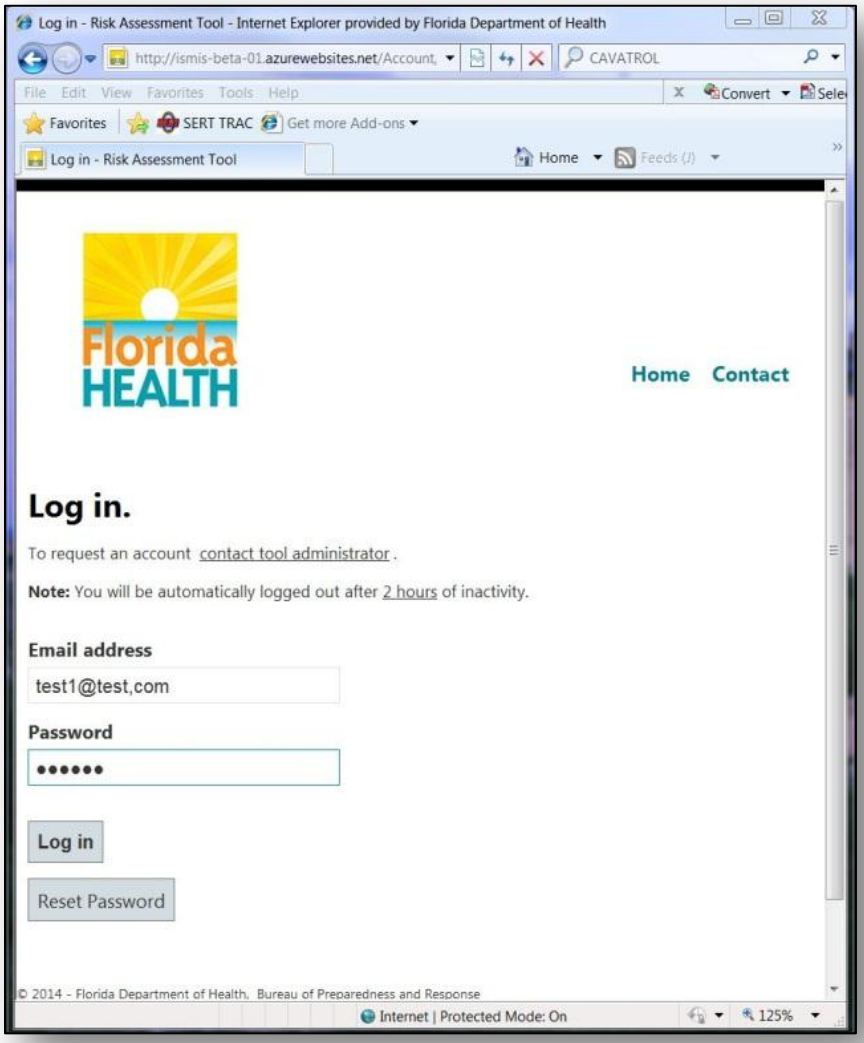
The data-input account is only used to enter data for the Capabilities Assessment and the Resources Assessment worksheets. The read-only account allows you to see the information for your own county and for other jurisdictions, and to create queries.

Click on the login button in the top right hand corner to login to the website.

You should then see the following page.



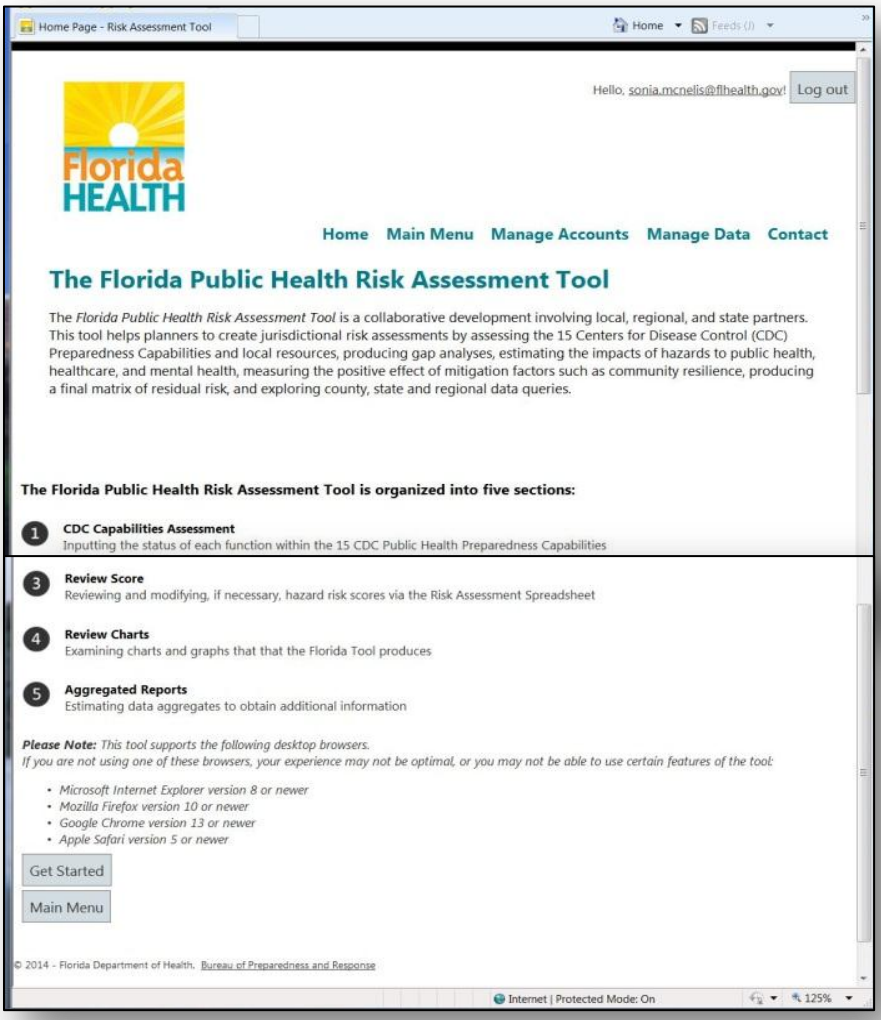
Now just enter your login information.



Click on the "Log in" button to log into the website.

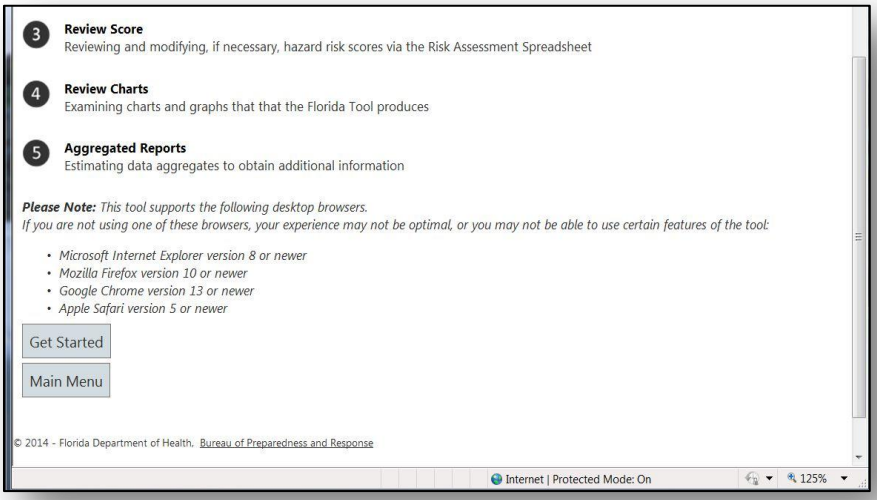
In order to protect the integrity of the database, you will be automatically logged out after 2 hours of inactivity.

You should now see the page below with a welcome statement at the top right hand corner welcoming you to the tool.



Using the FPHRAT

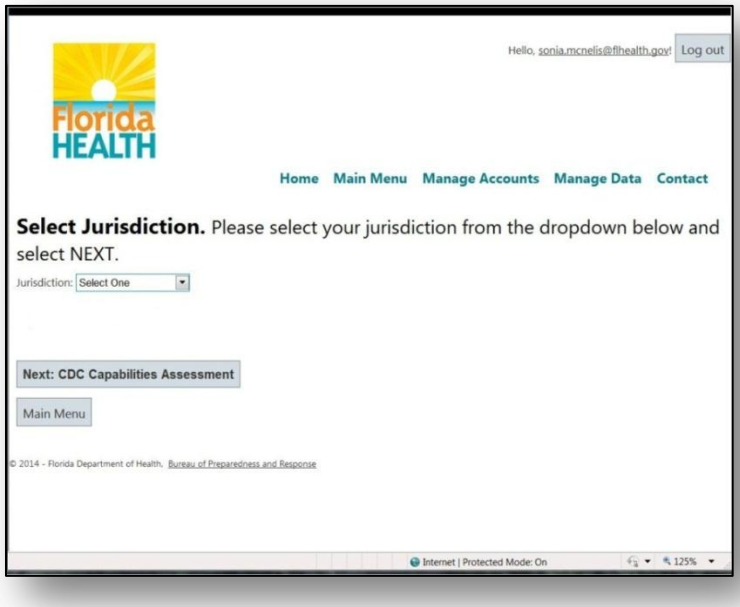
To get started, click on the "Get Started" link shown at the bottom left hand corner of the screen.



Clicking the "Get Started" link should bring you to the page below. In this page you will select the jurisdiction you would like to work on or edit.

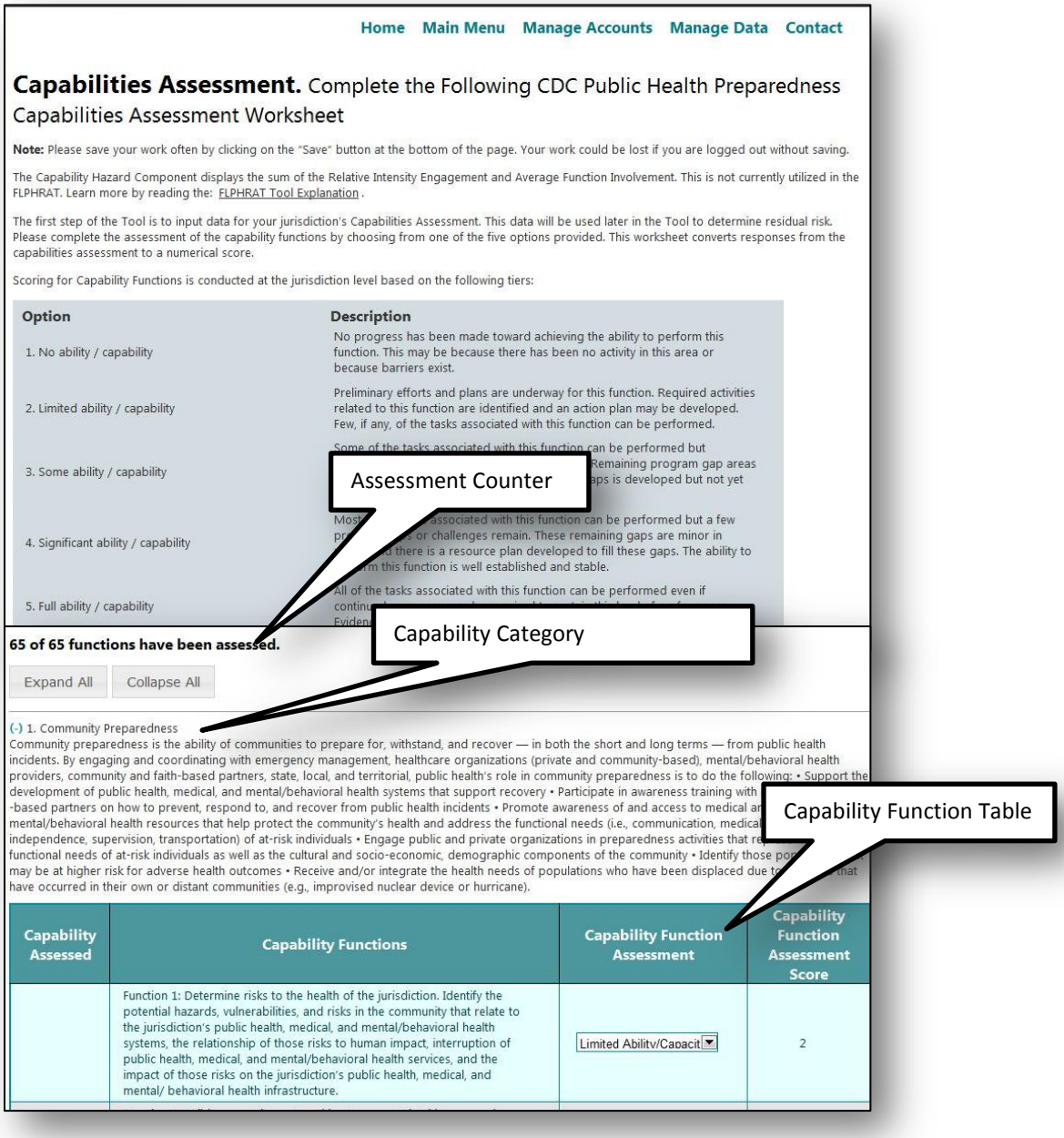
Click on the "Select one" drop down and choose the jurisdiction you would like to work on.

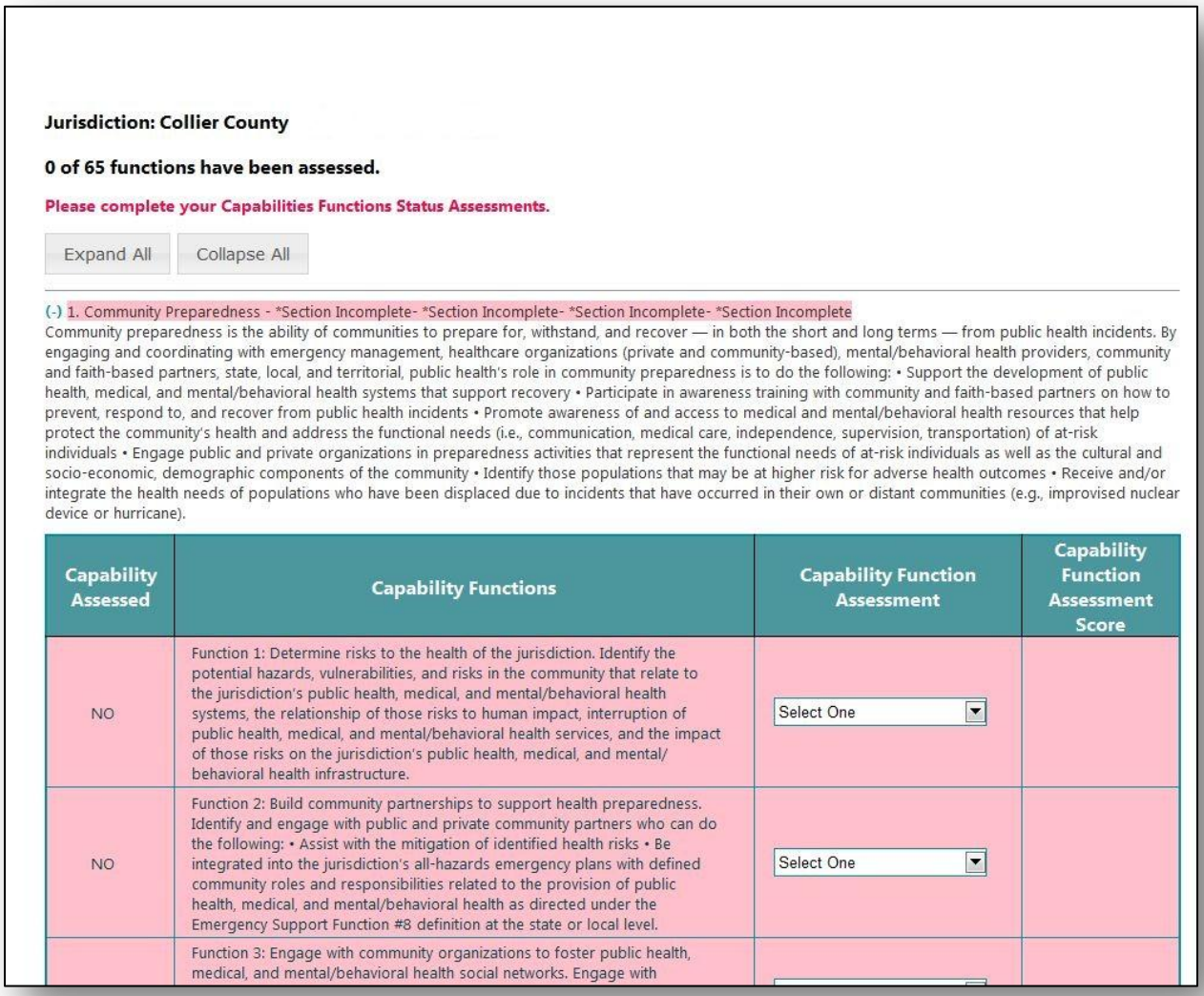
You should see the page below. Now click on the "Next: CDC Capabilities Assessment" button to move forward.



Capability Assessment

You should now see the page below. In this section you will assess and report on the capabilities of the selected jurisdiction in regards to each of the specified functions.





Jurisdiction: Collier County

0 of 65 functions have been assessed.

Please complete your Capabilities Functions Status Assessments.

Expand All | Collapse All

(-) 1. Community Preparedness - *Section Incomplete- *Section Incomplete- *Section Incomplete- *Section Incomplete

Community preparedness is the ability of communities to prepare for, withstand, and recover — in both the short and long terms — from public health incidents. By engaging and coordinating with emergency management, healthcare organizations (private and community-based), mental/behavioral health providers, community and faith-based partners, state, local, and territorial, public health's role in community preparedness is to do the following: • Support the development of public health, medical, and mental/behavioral health systems that support recovery • Participate in awareness training with community and faith-based partners on how to prevent, respond to, and recover from public health incidents • Promote awareness of and access to medical and mental/behavioral health resources that help protect the community's health and address the functional needs (i.e., communication, medical care, independence, supervision, transportation) of at-risk individuals • Engage public and private organizations in preparedness activities that represent the functional needs of at-risk individuals as well as the cultural and socio-economic, demographic components of the community • Identify those populations that may be at higher risk for adverse health outcomes • Receive and/or integrate the health needs of populations who have been displaced due to incidents that have occurred in their own or distant communities (e.g., improvised nuclear device or hurricane).

Capability Assessed	Capability Functions	Capability Function Assessment	Capability Function Assessment Score
NO	Function 1: Determine risks to the health of the jurisdiction. Identify the potential hazards, vulnerabilities, and risks in the community that relate to the jurisdiction's public health, medical, and mental/behavioral health systems, the relationship of those risks to human impact, interruption of public health, medical, and mental/behavioral health services, and the impact of those risks on the jurisdiction's public health, medical, and mental/ behavioral health infrastructure.	Select One	
NO	Function 2: Build community partnerships to support health preparedness. Identify and engage with public and private community partners who can do the following: • Assist with the mitigation of identified health risks • Be integrated into the jurisdiction's all-hazards emergency plans with defined community roles and responsibilities related to the provision of public health, medical, and mental/behavioral health as directed under the Emergency Support Function #8 definition at the state or local level.	Select One	
	Function 3: Engage with community organizations to foster public health, medical, and mental/behavioral health social networks. Engage with		

This section has 65 functions in 15 capability categories that need to be assessed for the jurisdiction. Until all 65 have been assessed, the tool will not allow you to move forward to the next worksheet. You can determine how many of the 65 functions have been assessed by looking at the assessment counter.

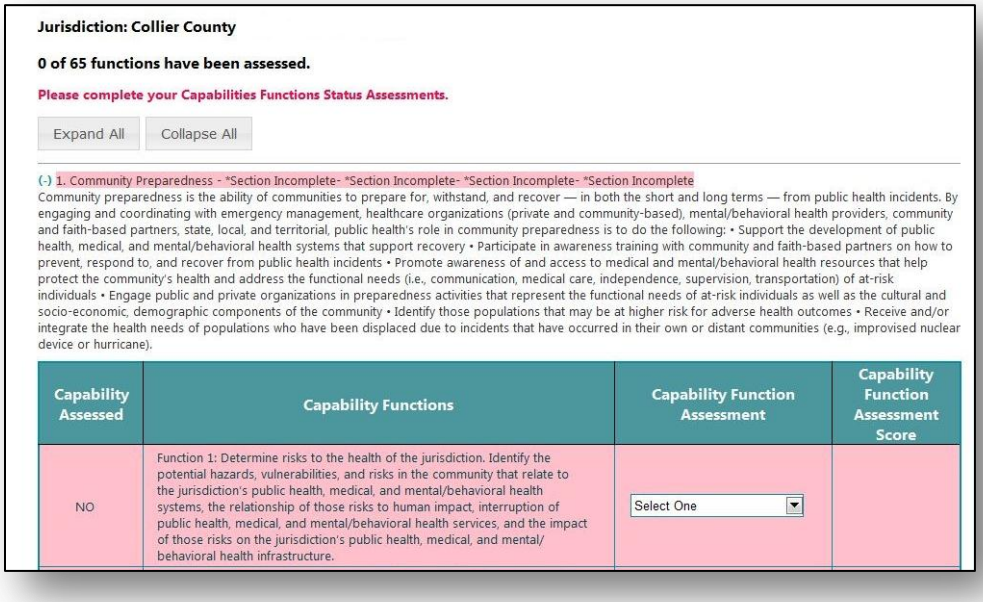
It is possible to display or collapse all, one or several capabilities using the "Expand all" or "Collapse all" buttons or the symbols (+) or (-).

Each capability is denoted by a number and its title. There you will also find a description of the capability. Under each capability category you will find a table that lists the functions, a description of the function, and the function's assessment represented by a dropdown. To assess the function, click on the drop down and select the appropriate value. Once functions are assessed, it is indicated by a change of color in the table, the word "No" in "Capability

Assessed" column disappears as well as the message near the capability title-"*Section Incomplete". The capabilities can be assessed in any order.

Note: The Capability Function Assessment may be preset to "No Ability/Capacity" and it must be updated by each jurisdiction.

As you can see below, selecting a value has changed the function's highlighted color from a reddish hue to blue indicating it has been assessed. You will also find that the capability function assessment score has been updated to a numeric value. This will be used by the tool later on in the summary data.



Jurisdiction: Collier County

0 of 65 functions have been assessed.

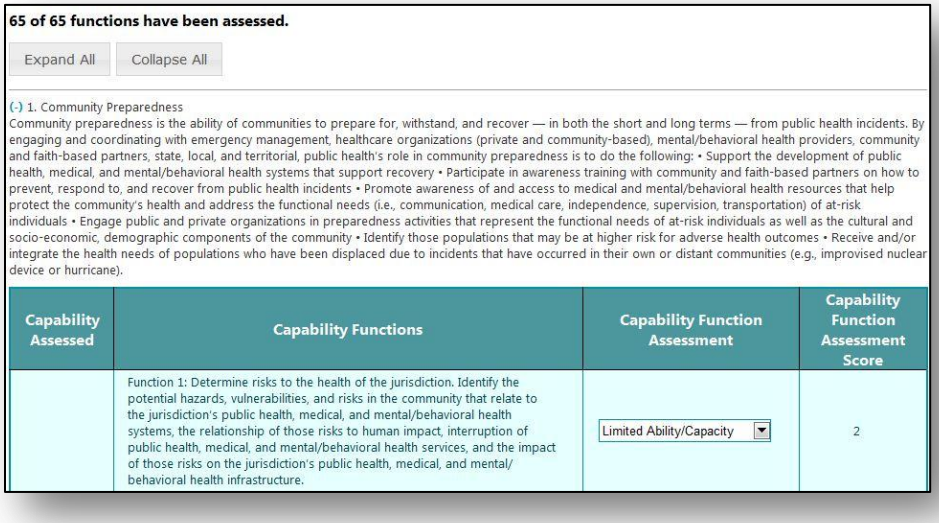
Please complete your Capabilities Functions Status Assessments.

Expand All | Collapse All

(-) 1. Community Preparedness - *Section Incomplete- *Section Incomplete- *Section Incomplete- *Section Incomplete

Community preparedness is the ability of communities to prepare for, withstand, and recover — in both the short and long terms — from public health incidents. By engaging and coordinating with emergency management, healthcare organizations (private and community-based), mental/behavioral health providers, community and faith-based partners, state, local, and territorial, public health's role in community preparedness is to do the following: • Support the development of public health, medical, and mental/behavioral health systems that support recovery • Participate in awareness training with community and faith-based partners on how to prevent, respond to, and recover from public health incidents • Promote awareness of and access to medical and mental/behavioral health resources that help protect the community's health and address the functional needs (i.e., communication, medical care, independence, supervision, transportation) of at-risk individuals • Engage public and private organizations in preparedness activities that represent the functional needs of at-risk individuals as well as the cultural and socio-economic, demographic components of the community • Identify those populations that may be at higher risk for adverse health outcomes • Receive and/or integrate the health needs of populations who have been displaced due to incidents that have occurred in their own or distant communities (e.g., improvised nuclear device or hurricane).

Capability Assessed	Capability Functions	Capability Function Assessment	Capability Function Assessment Score
NO	Function 1: Determine risks to the health of the jurisdiction. Identify the potential hazards, vulnerabilities, and risks in the community that relate to the jurisdiction's public health, medical, and mental/behavioral health systems, the relationship of those risks to human impact, interruption of public health, medical, and mental/behavioral health services, and the impact of those risks on the jurisdiction's public health, medical, and mental/ behavioral health infrastructure.	Select One	



65 of 65 functions have been assessed.

Expand All | Collapse All

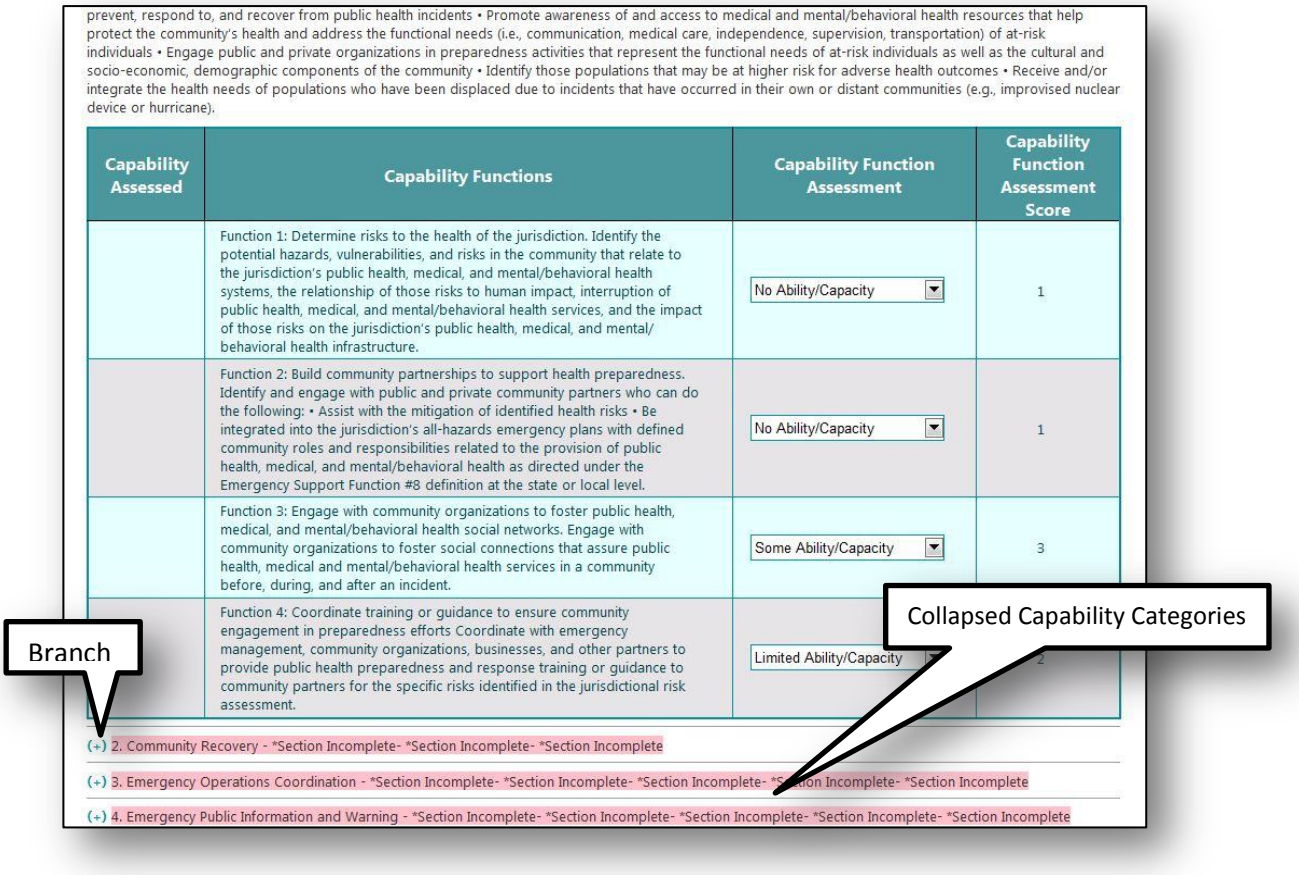
(-) 1. Community Preparedness

Community preparedness is the ability of communities to prepare for, withstand, and recover — in both the short and long terms — from public health incidents. By engaging and coordinating with emergency management, healthcare organizations (private and community-based), mental/behavioral health providers, community and faith-based partners, state, local, and territorial, public health's role in community preparedness is to do the following: • Support the development of public health, medical, and mental/behavioral health systems that support recovery • Participate in awareness training with community and faith-based partners on how to prevent, respond to, and recover from public health incidents • Promote awareness of and access to medical and mental/behavioral health resources that help protect the community's health and address the functional needs (i.e., communication, medical care, independence, supervision, transportation) of at-risk individuals • Engage public and private organizations in preparedness activities that represent the functional needs of at-risk individuals as well as the cultural and socio-economic, demographic components of the community • Identify those populations that may be at higher risk for adverse health outcomes • Receive and/or integrate the health needs of populations who have been displaced due to incidents that have occurred in their own or distant communities (e.g., improvised nuclear device or hurricane).

Capability Assessed	Capability Functions	Capability Function Assessment	Capability Function Assessment Score
	Function 1: Determine risks to the health of the jurisdiction. Identify the potential hazards, vulnerabilities, and risks in the community that relate to the jurisdiction's public health, medical, and mental/behavioral health systems, the relationship of those risks to human impact, interruption of public health, medical, and mental/behavioral health services, and the impact of those risks on the jurisdiction's public health, medical, and mental/ behavioral health infrastructure.	Limited Ability/Capacity	2

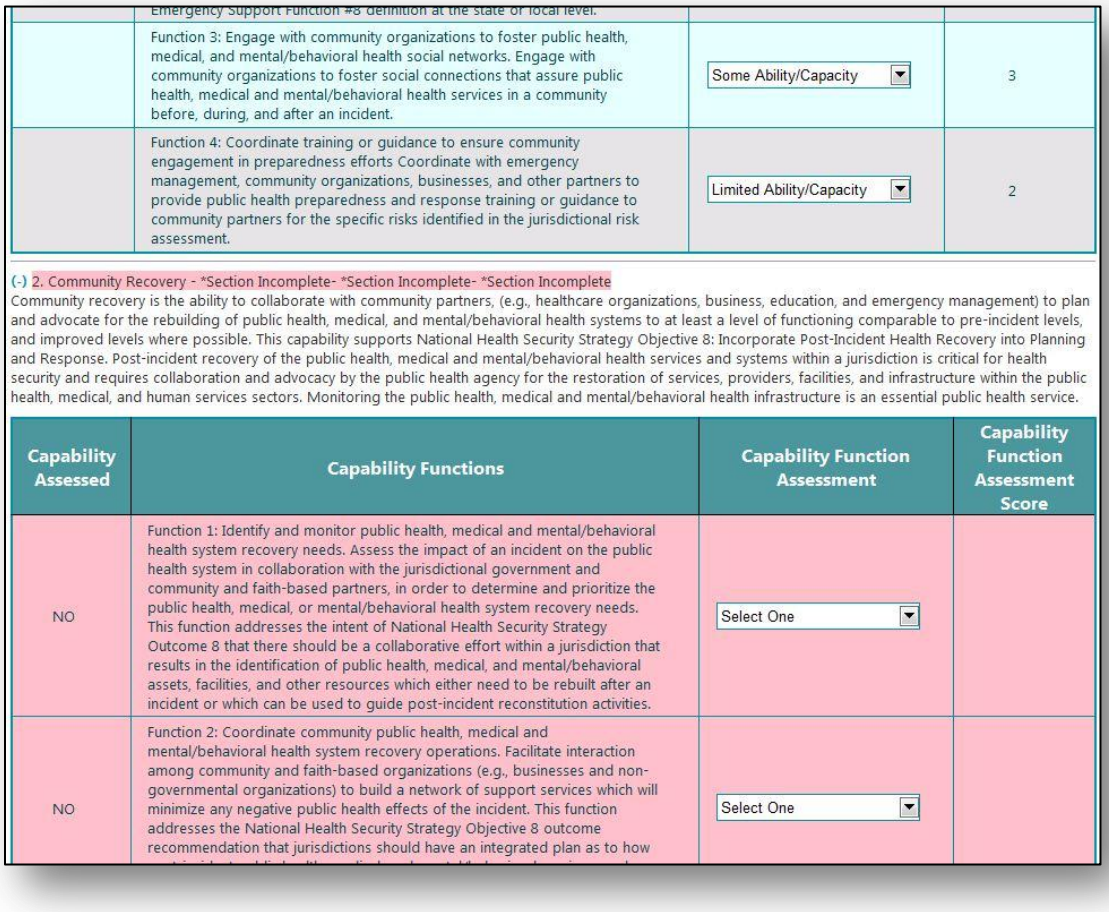
Continue assessing all the functions for this capability category.

After assessing the capability functions for the first capability category, your screen should look similar to the page below.



You should see underneath the first capability category the list of the other 14 capability categories as shown in the picture above. They are currently collapsed, hiding their content. In order to expand the first capability category for assessment, click on the branch symbol which will change the symbol from (+) to (-).

You should now see the second capability expanded, as the first is completed allowing you to continue assessing each of the 65 functions.



	Emergency Support Function #8 definition at the state or local level.		
	Function 3: Engage with community organizations to foster public health, medical, and mental/behavioral health social networks. Engage with community organizations to foster social connections that assure public health, medical and mental/behavioral health services in a community before, during, and after an incident.	Some Ability/Capacity	3
	Function 4: Coordinate training or guidance to ensure community engagement in preparedness efforts Coordinate with emergency management, community organizations, businesses, and other partners to provide public health preparedness and response training or guidance to community partners for the specific risks identified in the jurisdictional risk assessment.	Limited Ability/Capacity	2

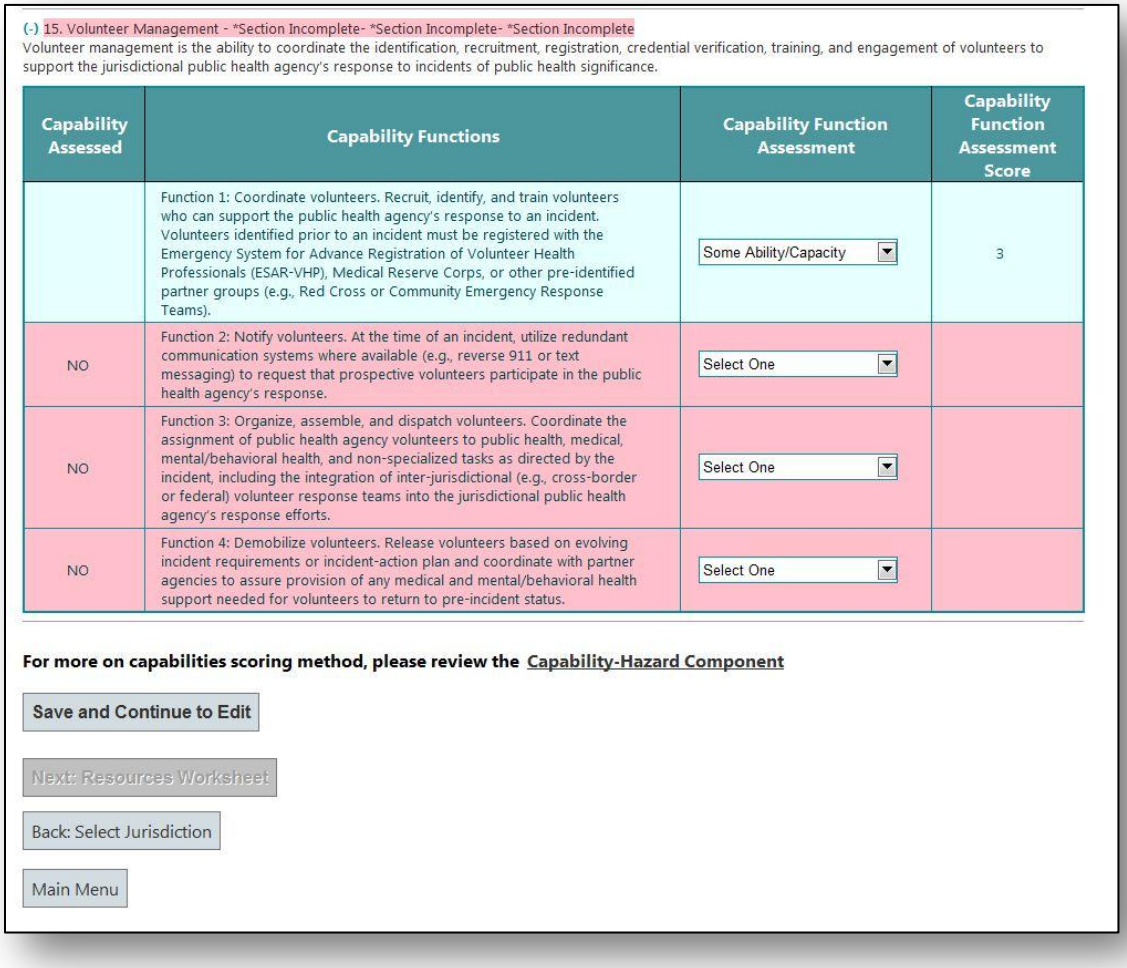
(-) 2. Community Recovery - *Section Incomplete- *Section Incomplete- *Section Incomplete

Community recovery is the ability to collaborate with community partners, (e.g., healthcare organizations, business, education, and emergency management) to plan and advocate for the rebuilding of public health, medical, and mental/behavioral health systems to at least a level of functioning comparable to pre-incident levels, and improved levels where possible. This capability supports National Health Security Strategy Objective 8: Incorporate Post-Incident Health Recovery into Planning and Response. Post-incident recovery of the public health, medical and mental/behavioral health services and systems within a jurisdiction is critical for health security and requires collaboration and advocacy by the public health agency for the restoration of services, providers, facilities, and infrastructure within the public health, medical, and human services sectors. Monitoring the public health, medical and mental/behavioral health infrastructure is an essential public health service.

Capability Assessed	Capability Functions	Capability Function Assessment	Capability Function Assessment Score
NO	Function 1: Identify and monitor public health, medical and mental/behavioral health system recovery needs. Assess the impact of an incident on the public health system in collaboration with the jurisdictional government and community and faith-based partners, in order to determine and prioritize the public health, medical, or mental/behavioral health system recovery needs. This function addresses the intent of National Health Security Strategy Outcome 8 that there should be a collaborative effort within a jurisdiction that results in the identification of public health, medical, and mental/behavioral assets, facilities, and other resources which either need to be rebuilt after an incident or which can be used to guide post-incident reconstitution activities.	Select One	
NO	Function 2: Coordinate community public health, medical and mental/behavioral health system recovery operations. Facilitate interaction among community and faith-based organizations (e.g., businesses and non-governmental organizations) to build a network of support services which will minimize any negative public health effects of the incident. This function addresses the National Health Security Strategy Objective 8 outcome recommendation that jurisdictions should have an integrated plan as to how	Select One	

Continue through the page, expanding each capability category, and assess all functions listed. Feel free to collapse any category that you are not currently working on.

As you come to completion with your assessments, you will get to the bottom of the screen where you will find two buttons, "Save and Continue to Edit" and "Next: Resources Worksheet". As you can see, the "Next: Resources Worksheet" button is disabled. This is because all functions have not yet been assessed. Once the last function is assessed, the "Next: Resources Worksheet" will be enabled.



(-) 15. Volunteer Management - *Section Incomplete- *Section Incomplete- *Section Incomplete

Volunteer management is the ability to coordinate the identification, recruitment, registration, credential verification, training, and engagement of volunteers to support the jurisdictional public health agency's response to incidents of public health significance.

Capability Assessed	Capability Functions	Capability Function Assessment	Capability Function Assessment Score
	Function 1: Coordinate volunteers. Recruit, identify, and train volunteers who can support the public health agency's response to an incident. Volunteers identified prior to an incident must be registered with the Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP), Medical Reserve Corps, or other pre-identified partner groups (e.g., Red Cross or Community Emergency Response Teams).	Some Ability/Capacity	3
NO	Function 2: Notify volunteers. At the time of an incident, utilize redundant communication systems where available (e.g., reverse 911 or text messaging) to request that prospective volunteers participate in the public health agency's response.	Select One	
NO	Function 3: Organize, assemble, and dispatch volunteers. Coordinate the assignment of public health agency volunteers to public health, medical, mental/behavioral health, and non-specialized tasks as directed by the incident, including the integration of inter-jurisdictional (e.g., cross-border or federal) volunteer response teams into the jurisdictional public health agency's response efforts.	Select One	
NO	Function 4: Demobilize volunteers. Release volunteers based on evolving incident requirements or incident-action plan and coordinate with partner agencies to assure provision of any medical and mental/behavioral health support needed for volunteers to return to pre-incident status.	Select One	

For more on capabilities scoring method, please review the Capability-Hazard Component

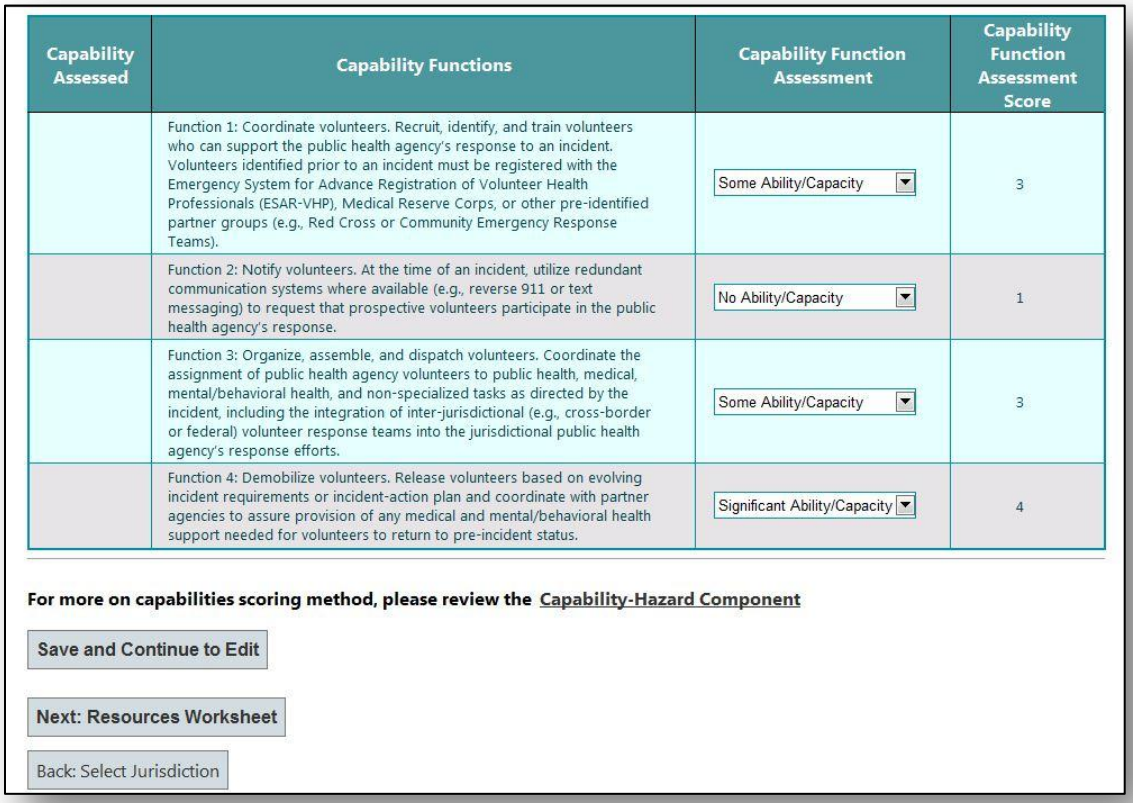
Save and Continue to Edit

Next: Resources Worksheet

Back: Select Jurisdiction

Main Menu

As you can see below, after the last assessment, the "Next: Resources Worksheet" button is now enabled.



Capability Assessed	Capability Functions	Capability Function Assessment	Capability Function Assessment Score
	Function 1: Coordinate volunteers. Recruit, identify, and train volunteers who can support the public health agency's response to an incident. Volunteers identified prior to an incident must be registered with the Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP), Medical Reserve Corps, or other pre-identified partner groups (e.g., Red Cross or Community Emergency Response Teams).	Some Ability/Capacity	3
	Function 2: Notify volunteers. At the time of an incident, utilize redundant communication systems where available (e.g., reverse 911 or text messaging) to request that prospective volunteers participate in the public health agency's response.	No Ability/Capacity	1
	Function 3: Organize, assemble, and dispatch volunteers. Coordinate the assignment of public health agency volunteers to public health, medical, mental/behavioral health, and non-specialized tasks as directed by the incident, including the integration of inter-jurisdictional (e.g., cross-border or federal) volunteer response teams into the jurisdictional public health agency's response efforts.	Some Ability/Capacity	3
	Function 4: Demobilize volunteers. Release volunteers based on evolving incident requirements or incident-action plan and coordinate with partner agencies to assure provision of any medical and mental/behavioral health support needed for volunteers to return to pre-incident status.	Significant Ability/Capacity	4

For more on capabilities scoring method, please review the Capability-Hazard Component

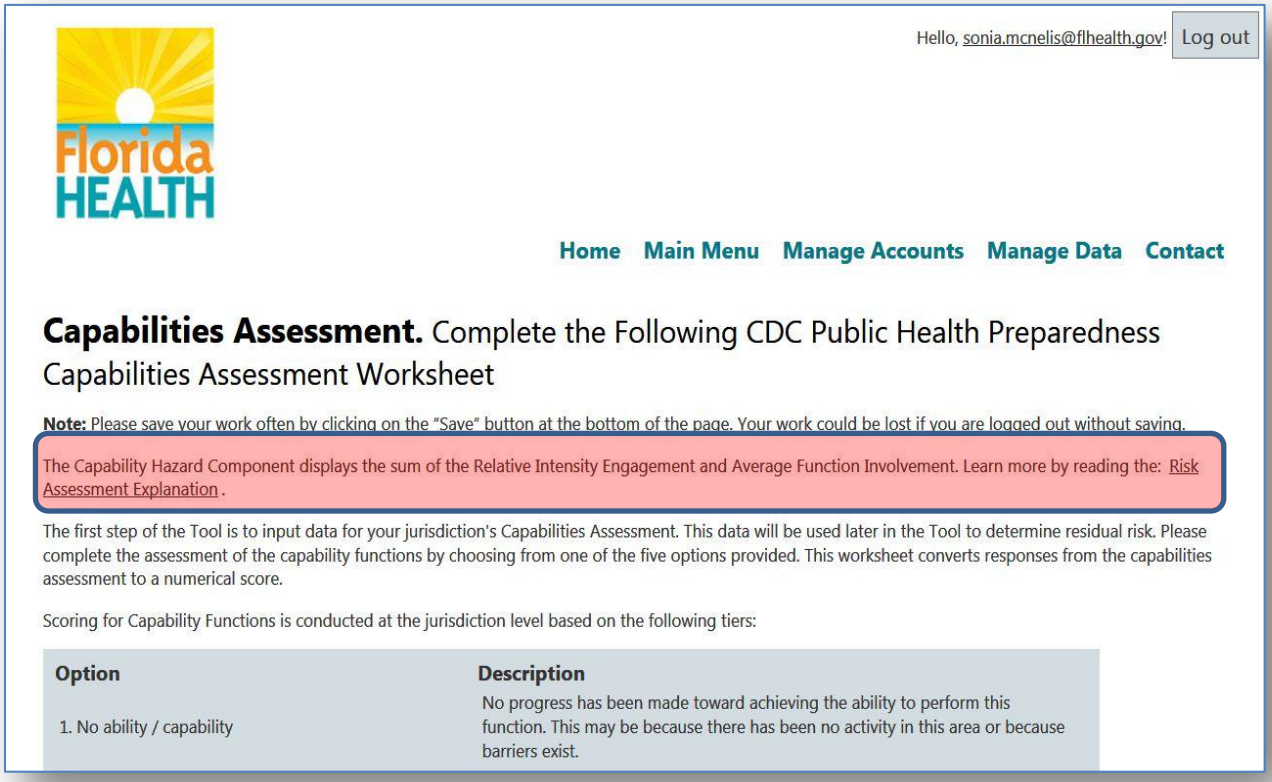
Save and Continue to Edit

Next: Resources Worksheet

Back: Select Jurisdiction

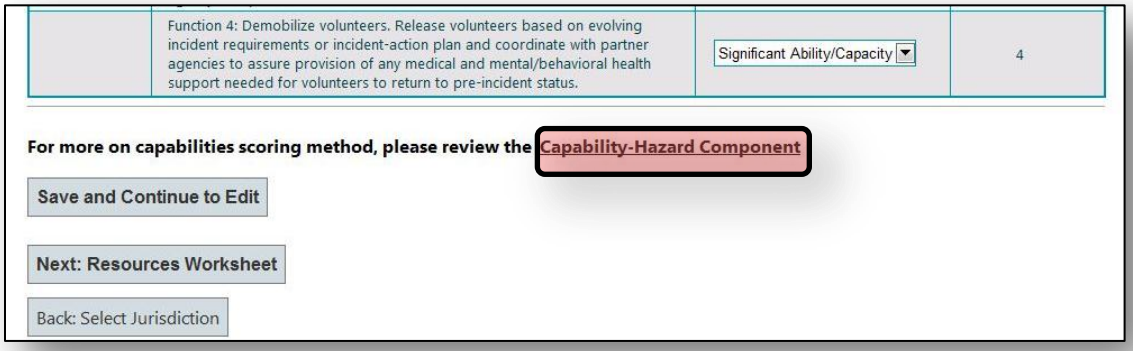
At any point and time during the assessment you can click the "Save and Continue to Edit" button to save your work so far. Until this button is selected, your work has not been saved. Please click on the "Save and Continue Edit" button.

After clicking on the button, your work is saved, and the page will refresh bringing you back to the top of the page. At this point, you can scroll down and assess any functions or modify any assessments before moving on.



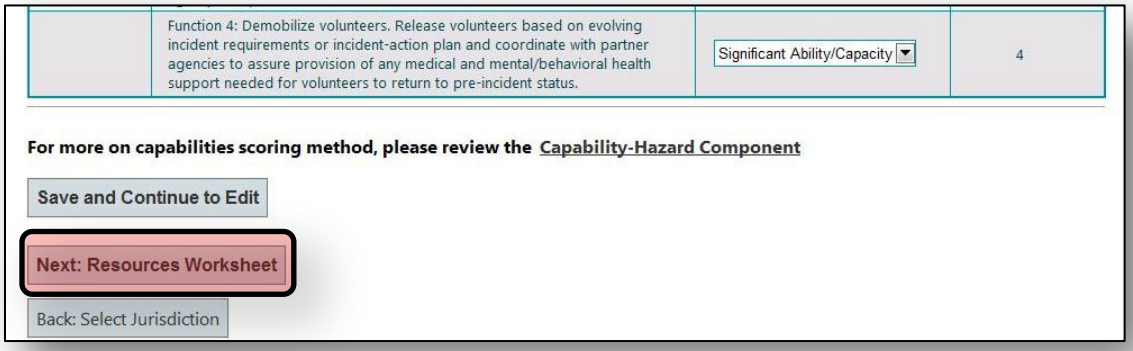
The "Risk Assessment Explanation" is a document describing all the components of the Risk Assessment including the Capability Hazard Component. The link to the document is on the Capability Assessment page. See the picture above.

At the bottom of the Capability Assessment page, there is a link to the Capability Hazard Component, which is an application that displays the capabilities' functions associated with each specific hazard.



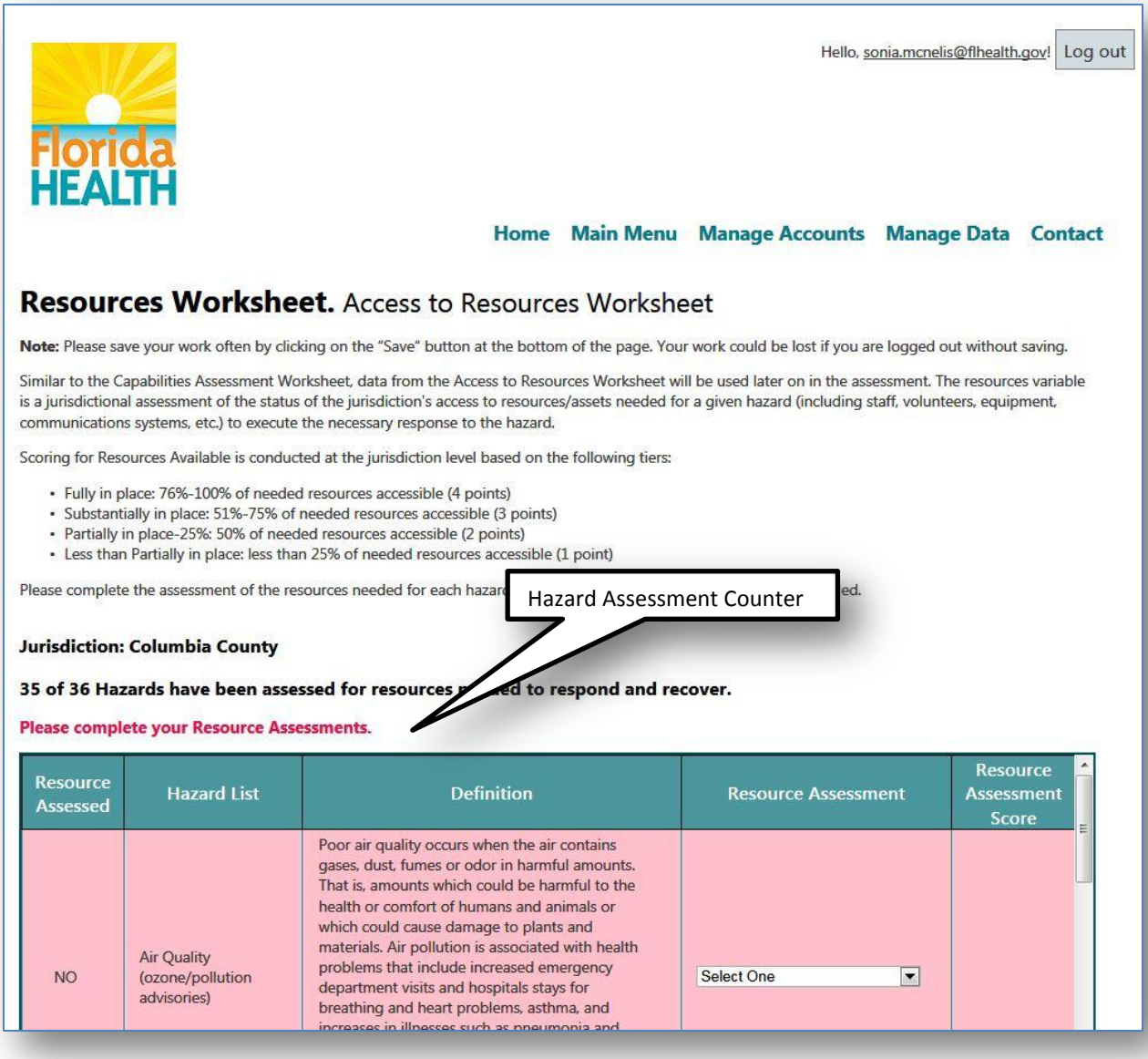
Now that all functions have been assessed, let's move on to the next step.

Click on the "Next: Resources Worksheet" button.



Resources Worksheet

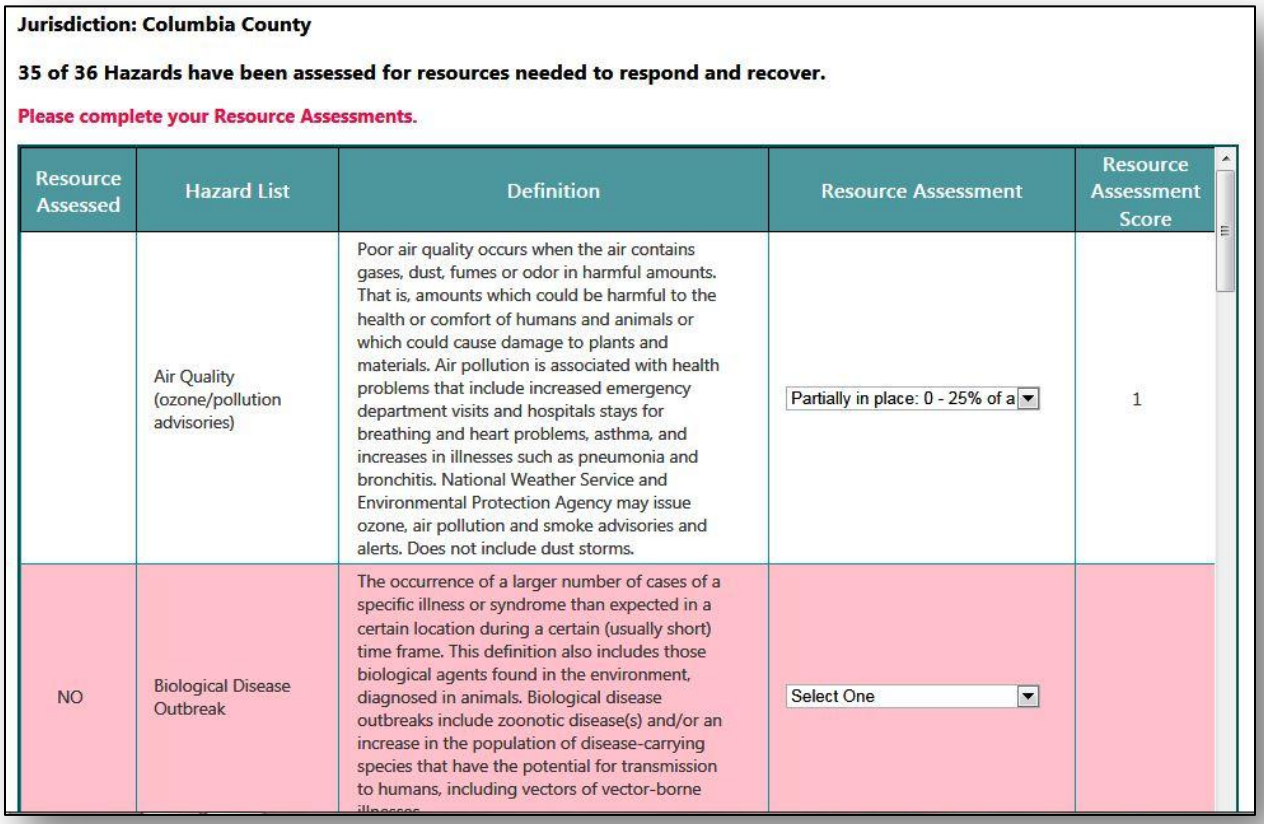
This worksheet is used to report on a jurisdictional level of access to required resources for each of the 36 hazards reported on by this tool.



Just as in the Capability Function Assessment, until all 36 hazards have been assessed, the tool will not allow you to continue. You will also find a hazard-assessment counter that lets you know how close you are to completion. On this page, you will find a scrollable window that contains a table listing 36 hazards, their definitions, the Resource Assessment and Resource

Assessment Scores. Click on the first "Select One" dropdown for the first hazard and choose the appropriate assessment.

As you can see, by assessing the hazard, the record changed from a reddish hue to white to indicate the hazard's resource has been assessed and the Hazard Assessment Counter has increased by 1 and the word "No" in the Resource Assessed column will disappear to indicate its completion.



Jurisdiction: Columbia County

35 of 36 Hazards have been assessed for resources needed to respond and recover.

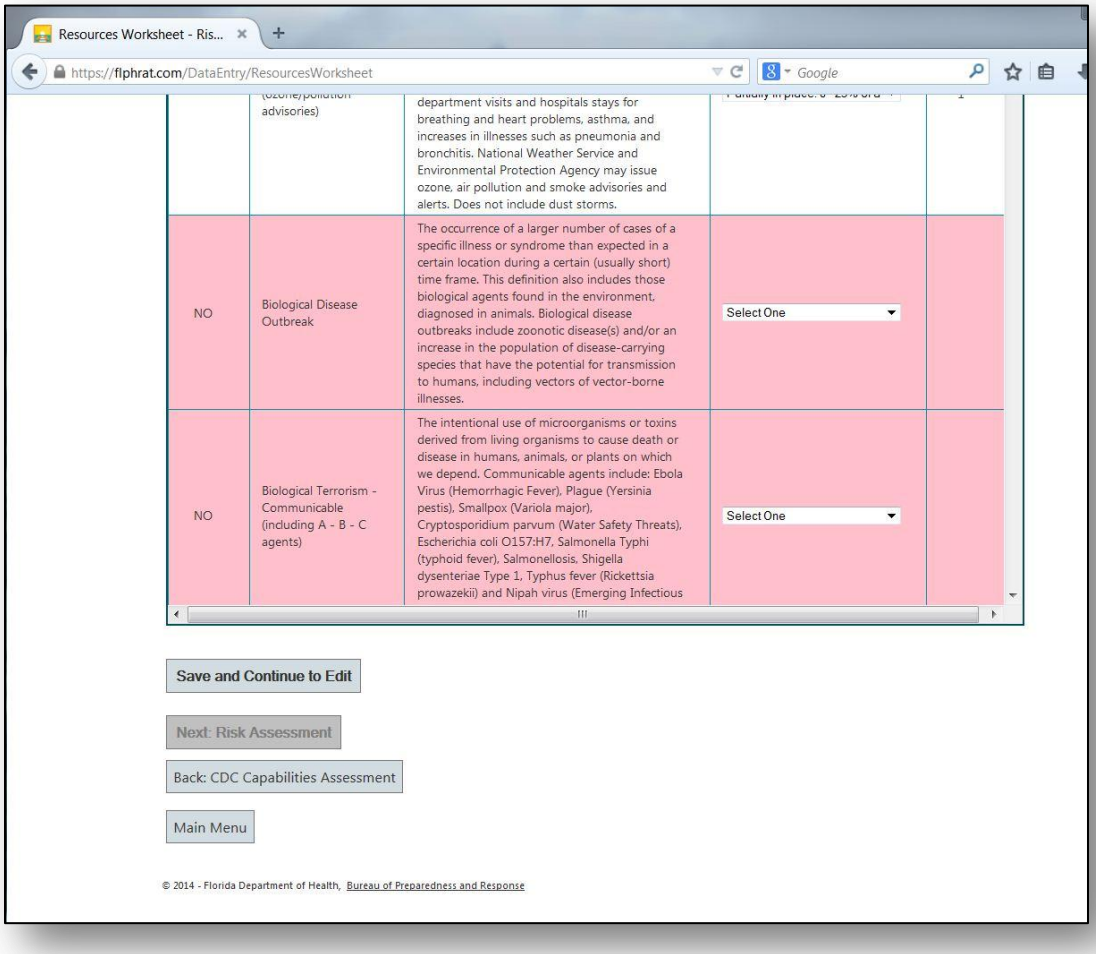
Please complete your Resource Assessments.

Resource Assessed	Hazard List	Definition	Resource Assessment	Resource Assessment Score
	Air Quality (ozone/pollution advisories)	Poor air quality occurs when the air contains gases, dust, fumes or odor in harmful amounts. That is, amounts which could be harmful to the health or comfort of humans and animals or which could cause damage to plants and materials. Air pollution is associated with health problems that include increased emergency department visits and hospitals stays for breathing and heart problems, asthma, and increases in illnesses such as pneumonia and bronchitis. National Weather Service and Environmental Protection Agency may issue ozone, air pollution and smoke advisories and alerts. Does not include dust storms.	Partially in place: 0 - 25% of a	1
NO	Biological Disease Outbreak	The occurrence of a larger number of cases of a specific illness or syndrome than expected in a certain location during a certain (usually short) time frame. This definition also includes those biological agents found in the environment, diagnosed in animals. Biological disease outbreaks include zoonotic disease(s) and/or an increase in the population of disease-carrying species that have the potential for transmission to humans, including vectors of vector-borne	Select One	

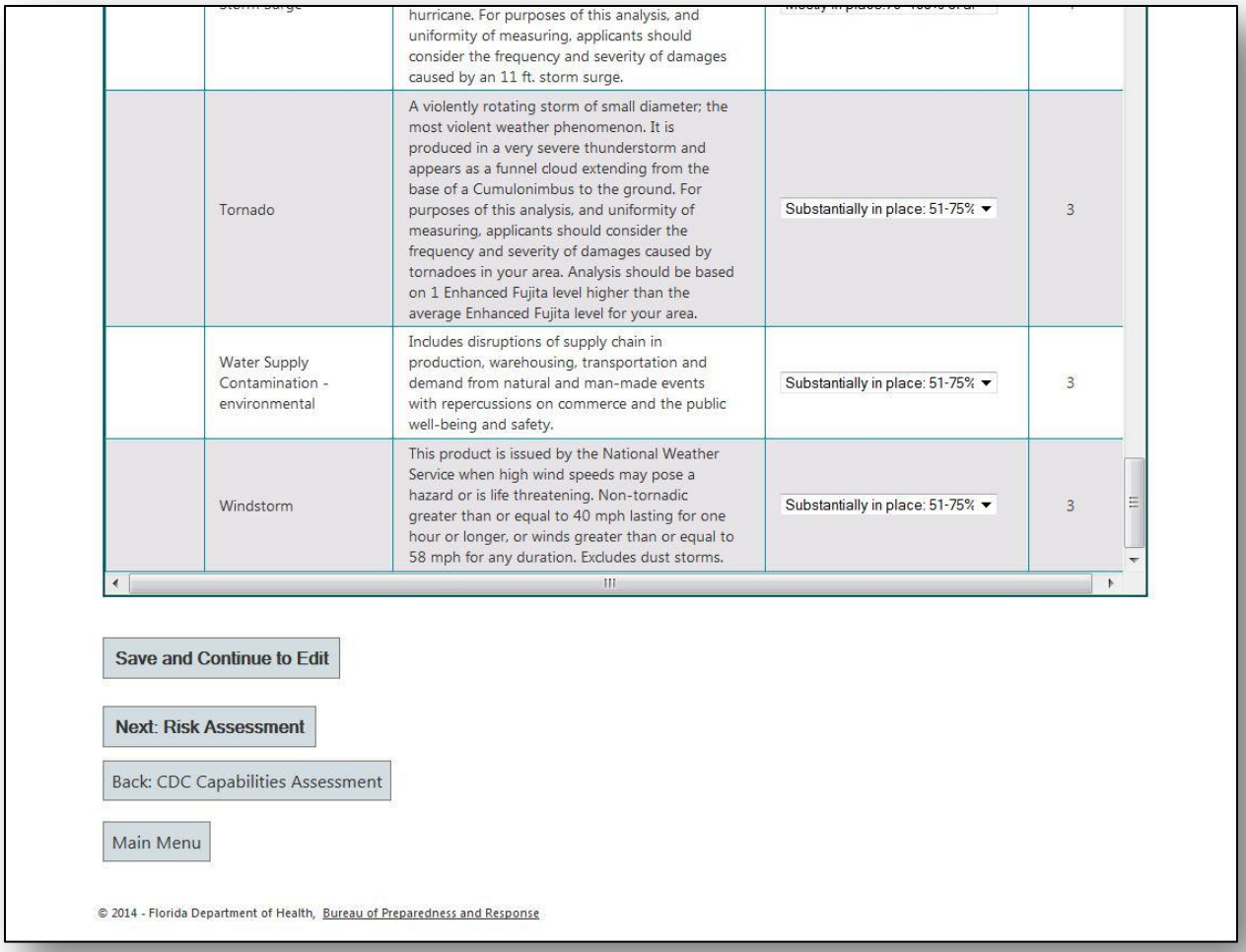
Now do the same for all 36 hazards, making sure to scroll down so you don't miss any of the listed hazards.

Note: The Needed Resources Access may be preset to "Partially in Place: 0-25%" and it must be updated by each jurisdiction.

As with the Capability Assessment, you have two buttons on the page: "Save and Continue to Edit" and "Next: Risk Assessment". As you can see, the "Next: Risk Assessment" button is disabled because all hazards have not yet been assessed. Once the last hazard is assessed, the "Next: Resources Worksheet" will be enabled.



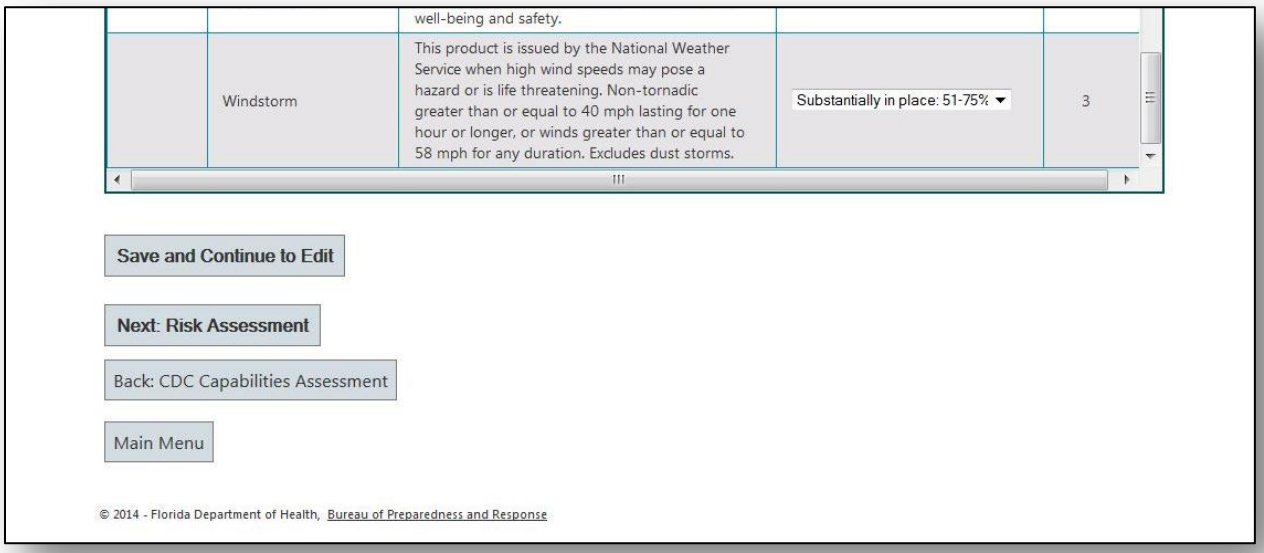
As you can see below, after the last assessment, the "Next: Risk Assessment" button is now enabled.



At any point and time during the assessment, you can click the "Save and Continue to Edit" button to save your work so far. Until this button is selected, your work has not been saved. Please click on the "Save and Continue Edit" button.

After clicking on the button, your work is saved and the page will refresh, bringing you back to the top of the page. At this point, you can scroll down and assess any hazards or modify any resource assessments you need to make before moving on.

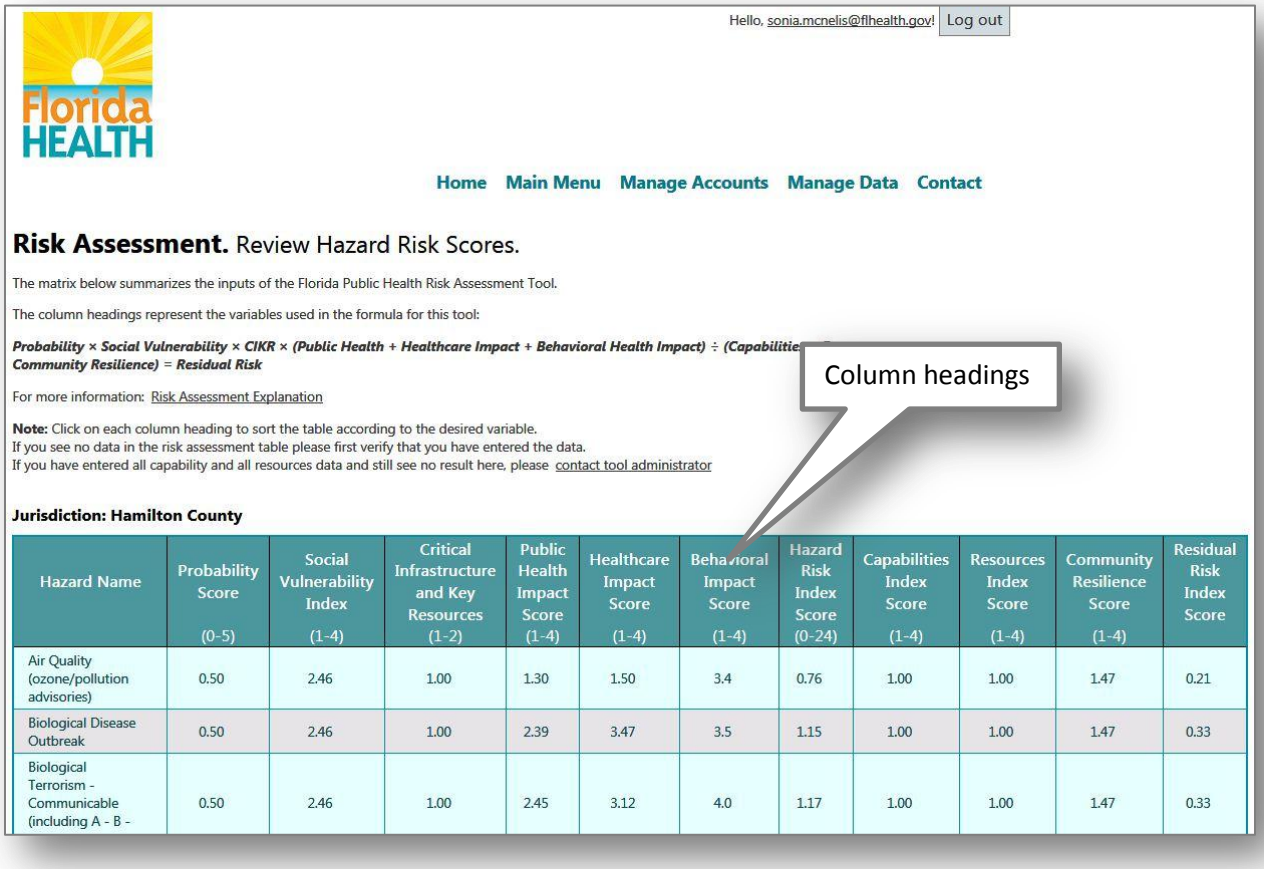
Now that all functions have been assessed, let's move on to the next step.



Click on the "Next: Risk Assessment" button.

Risk Assessment

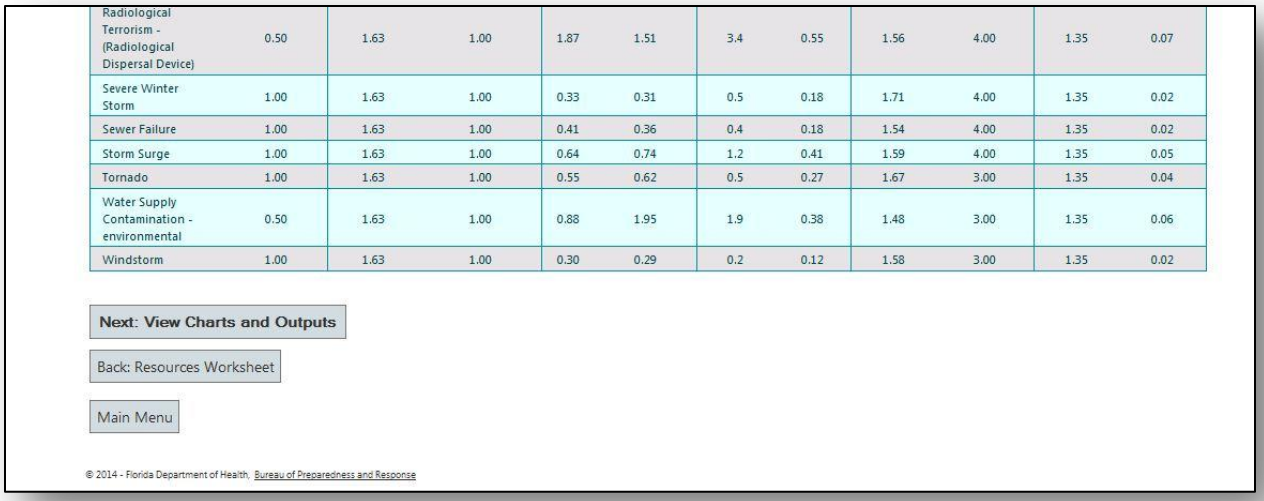
Below is the Risk Assessment page. This page takes the assessments previously made and provides an assessment of the risks for a particular jurisdiction with regard to the specified hazards. This is a non-editable spreadsheet that can be sorted, in descending or ascending order, by clicking on any of the column headings.



Hazard Name	Probability Score (0-5)	Social Vulnerability Index (1-4)	Critical Infrastructure and Key Resources (1-2)	Public Health Impact Score (1-4)	Healthcare Impact Score (1-4)	Behavioral Impact Score (1-4)	Hazard Risk Index Score (0-24)	Capabilities Index Score (1-4)	Resources Index Score (1-4)	Community Resilience Score (1-4)	Residual Risk Index Score
Air Quality (ozone/pollution advisories)	0.50	2.46	1.00	1.30	1.50	3.4	0.76	1.00	1.00	1.47	0.21
Biological Disease Outbreak	0.50	2.46	1.00	2.39	3.47	3.5	1.15	1.00	1.00	1.47	0.33
Biological Terrorism - Communicable (including A - B -	0.50	2.46	1.00	2.45	3.12	4.0	1.17	1.00	1.00	1.47	0.33

Scroll to the bottom of the page.

At the bottom of the page, you will find the "View Charts and Outputs" button. This will take you to the next section that provides charts for the data collected.

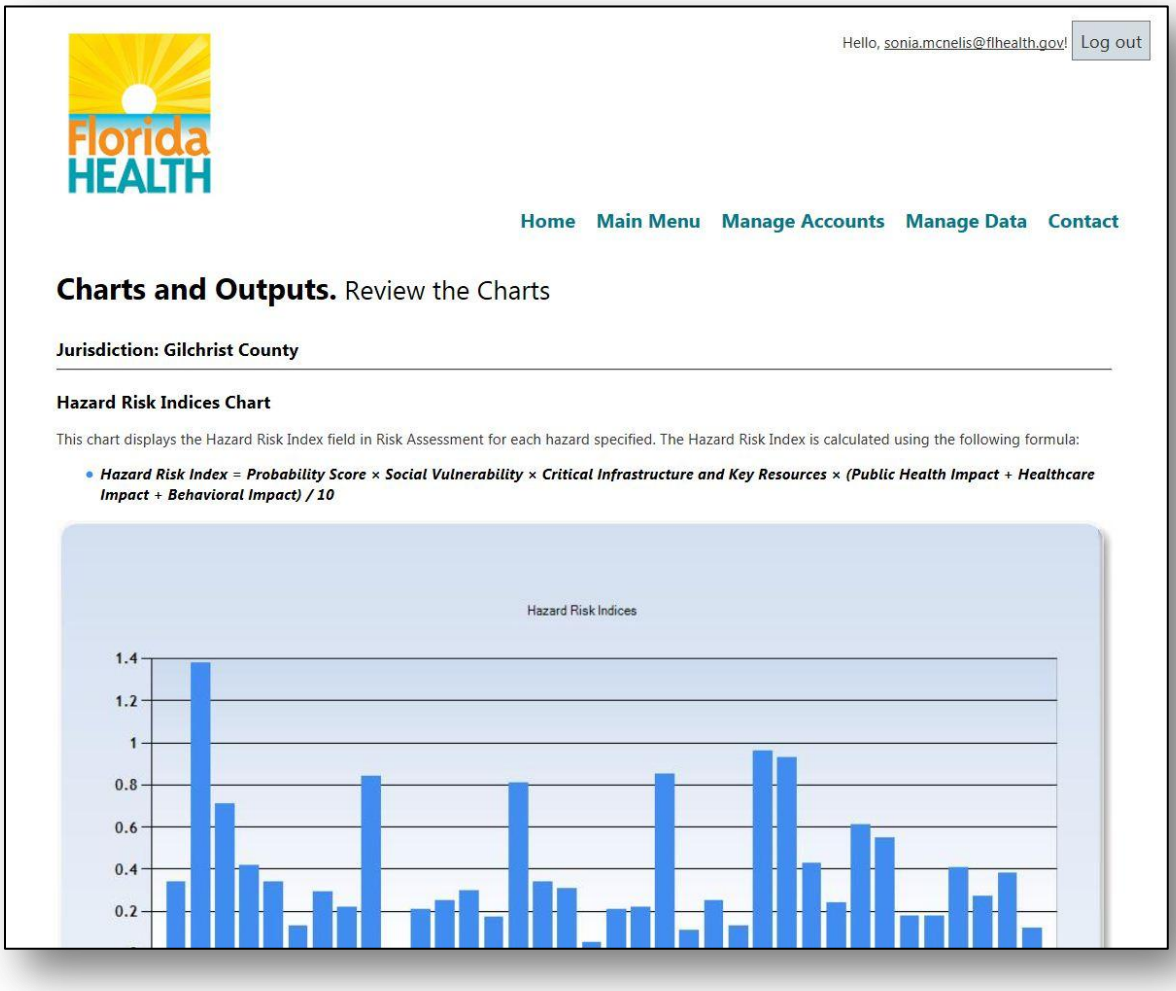


Radiological Terrorism - (Radiological Dispersal Device)	0.50	1.63	1.00	1.87	1.51	3.4	0.55	1.56	4.00	1.35	0.07
Severe Winter Storm	1.00	1.63	1.00	0.33	0.31	0.5	0.18	1.71	4.00	1.35	0.02
Sewer Failure	1.00	1.63	1.00	0.41	0.36	0.4	0.18	1.54	4.00	1.35	0.02
Storm Surge	1.00	1.63	1.00	0.64	0.74	1.2	0.41	1.59	4.00	1.35	0.05
Tornado	1.00	1.63	1.00	0.55	0.62	0.5	0.27	1.67	3.00	1.35	0.04
Water Supply Contamination - environmental	0.50	1.63	1.00	0.88	1.95	1.9	0.38	1.48	3.00	1.35	0.06
Windstorm	1.00	1.63	1.00	0.30	0.29	0.2	0.12	1.58	3.00	1.35	0.02

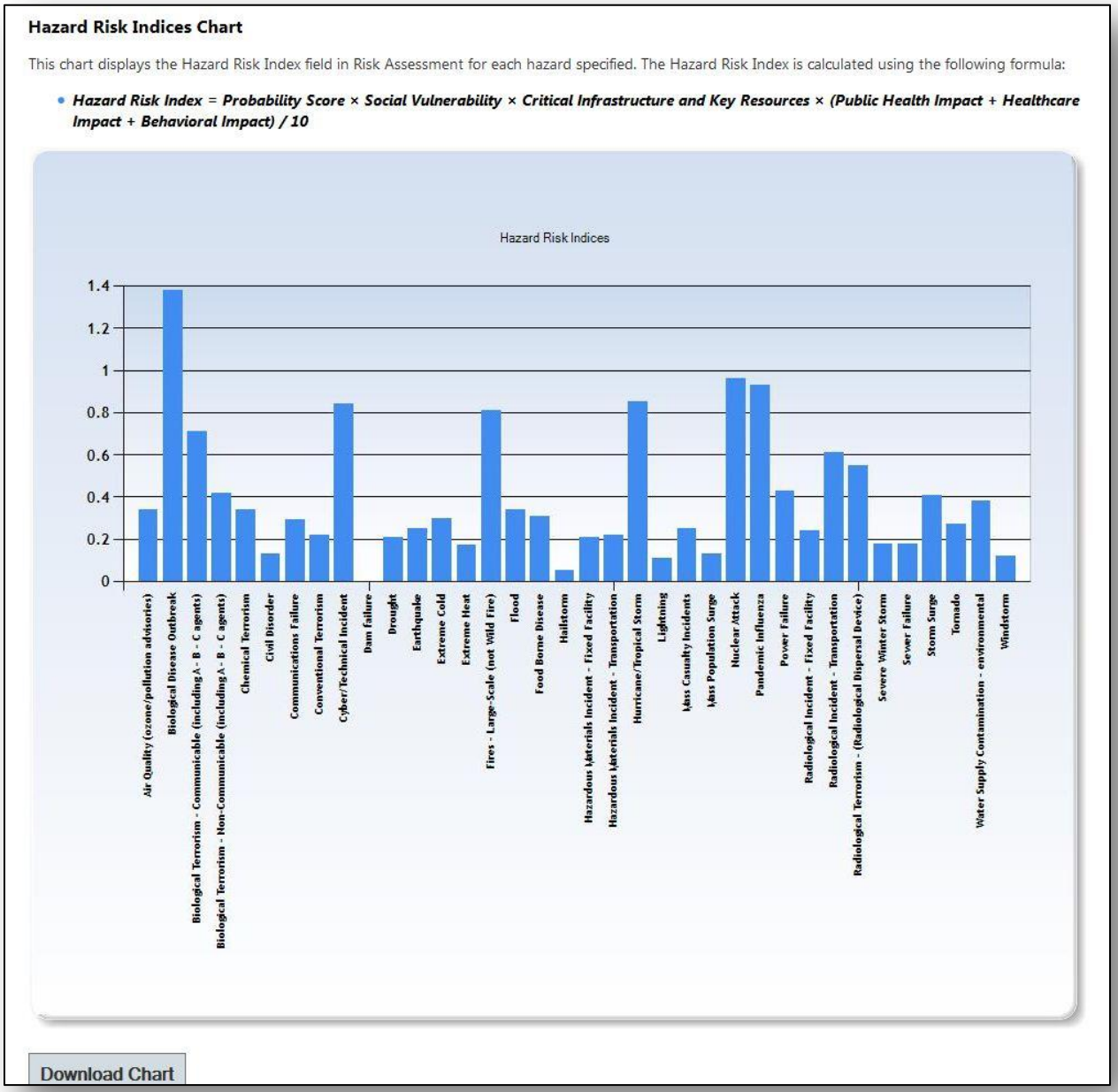
Click on "Next: View Charts and Outputs"

Charts and Outputs

Here you will find three charts on the data collected: the Hazard Risk Indices, Capabilities Gap Analysis, and the Resource Gap Charts.

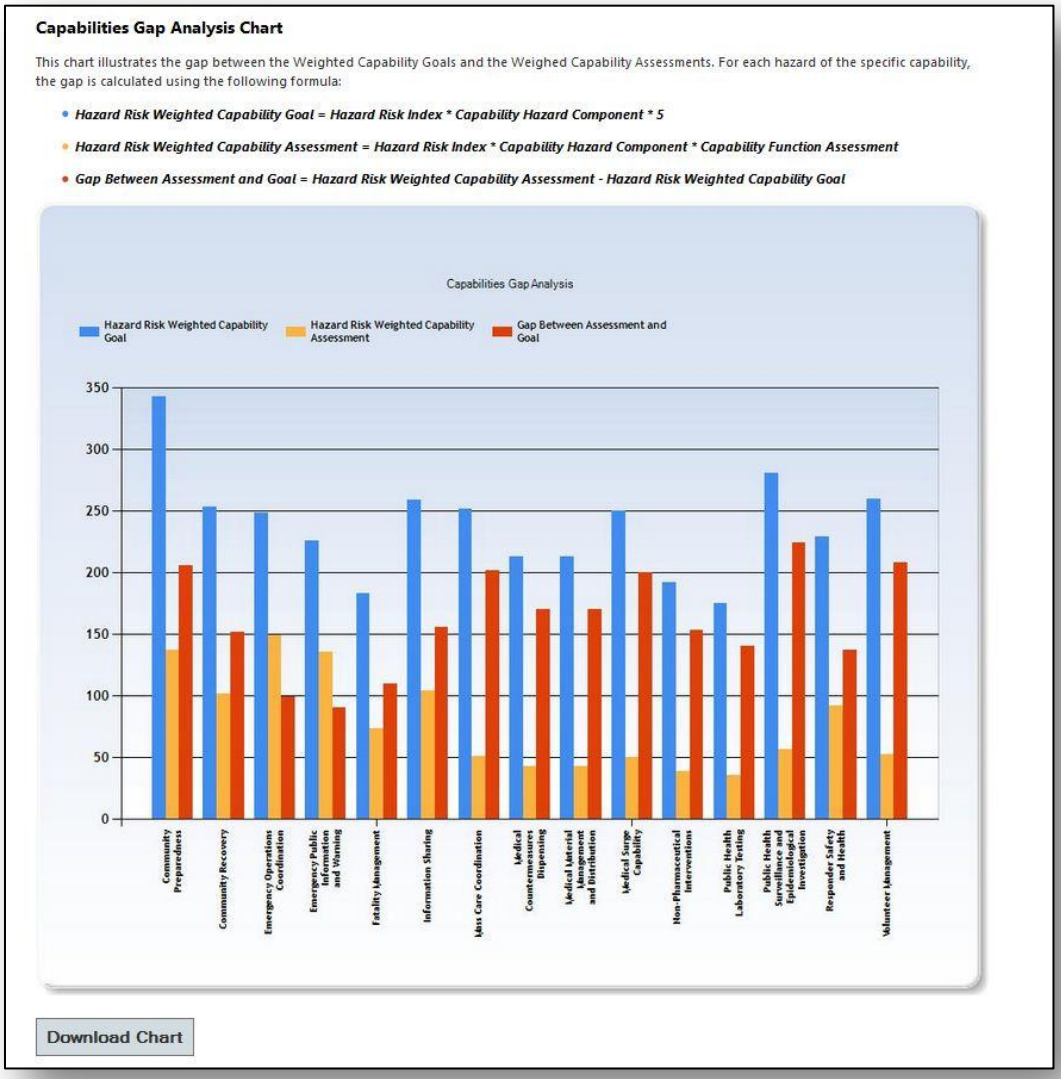


Hazard Risk Indices



The "Download Chart" button, allows you to download the chart as a JPG file.

Capabilities Gap Analysis

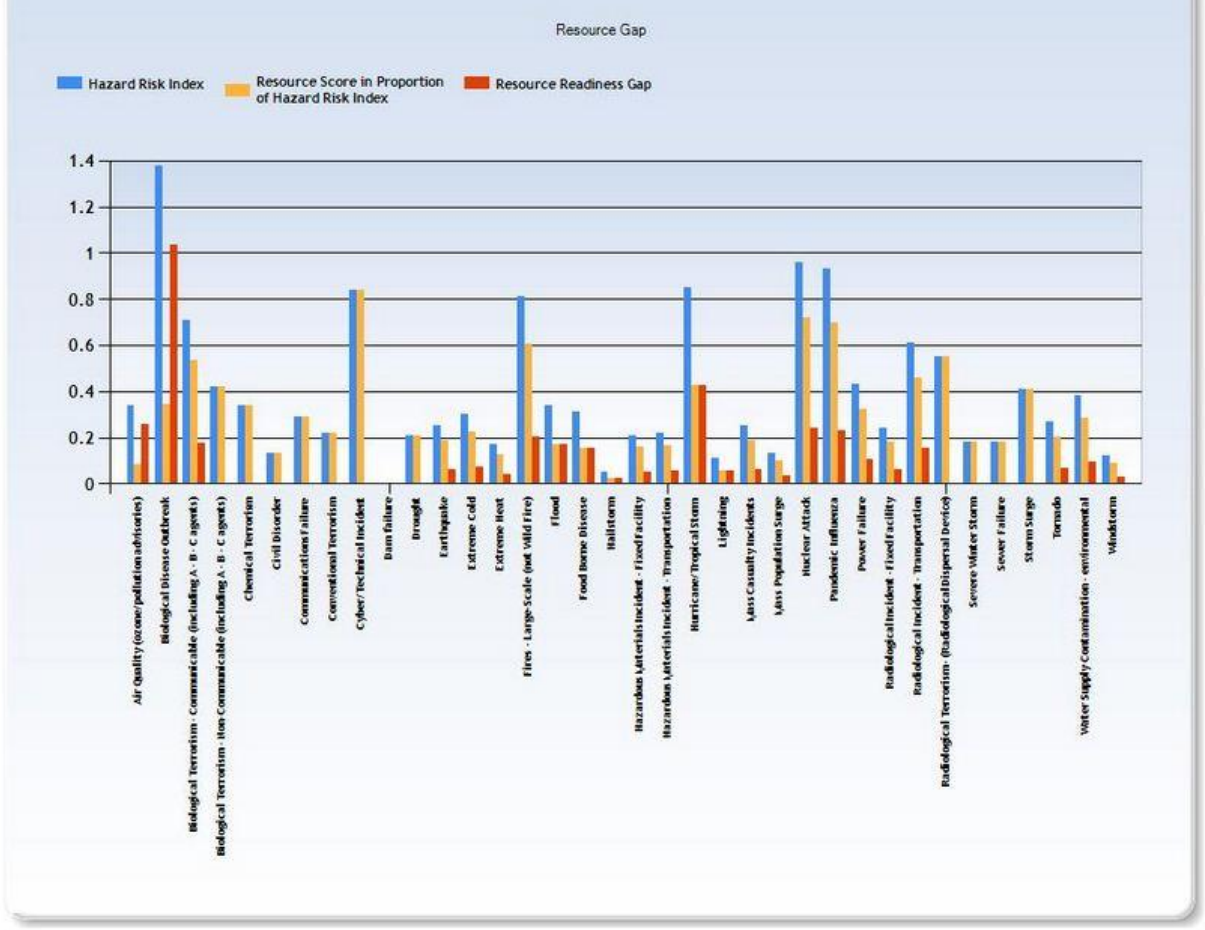


Resource Gap

Resource Gap Chart

This chart displays the Resource Assessment (Score) in proportion of the Hazard Risk Index to compare to the Hazard Risk Index (Score) itself by hazard. The Resource Assessment (Score) in proportion of the Hazard Risk Index (Score) is calculated using the following formula:

- ***Hazard Risk Index = Probability Score × Social Vulnerability × Critical Infrastructure and Key Resources × (Public Health Impact + Healthcare Impact + Behavioral Impact) / 10***
- ***Resource Score in Proportion of Hazard Risk Index = Resource Assessment / 4 * Hazard Risk Index***
- ***Resource Readiness Gap = Hazard Risk Index - Resource Score in Proportion of Hazard Risk Index***



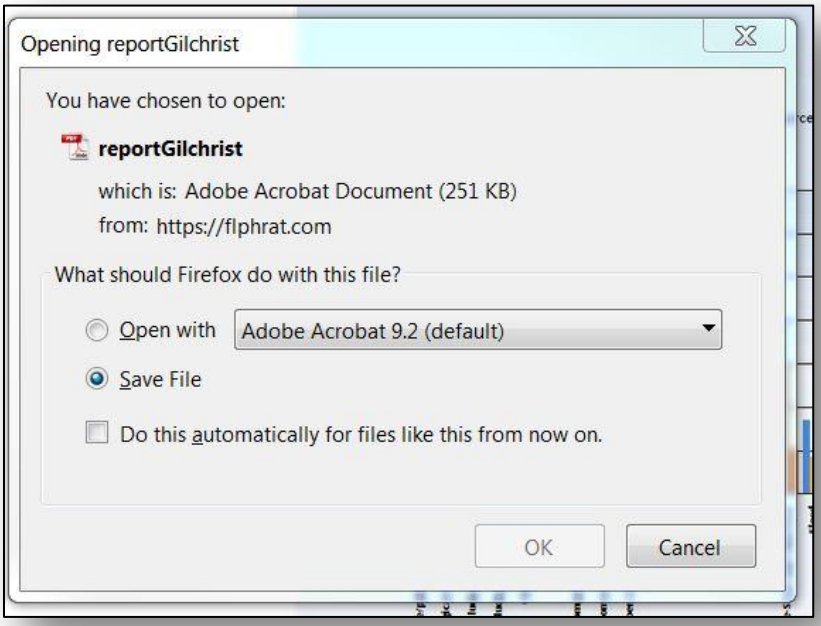
Download Chart

Download All as PDF

Scroll to the bottom of the screen. At the bottom of the page, you will find a "Download All as PDF" button. This button will allow you to either open or save all three charts as a PDF.

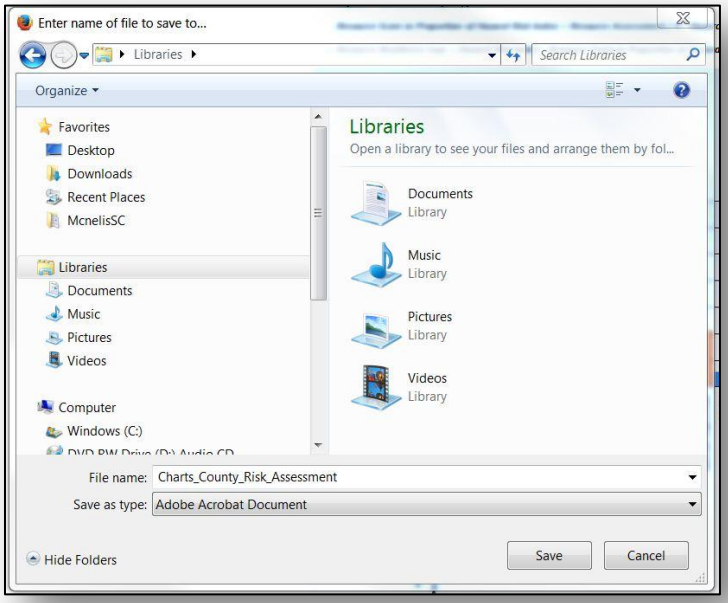
Click on "Download All as PDF".

After clicking on "Download All as PDF" a dialog box will appear. The appearance of the dialog box may vary when different internet browsers are used. The example below displays a dialog box from Mozilla Firefox.



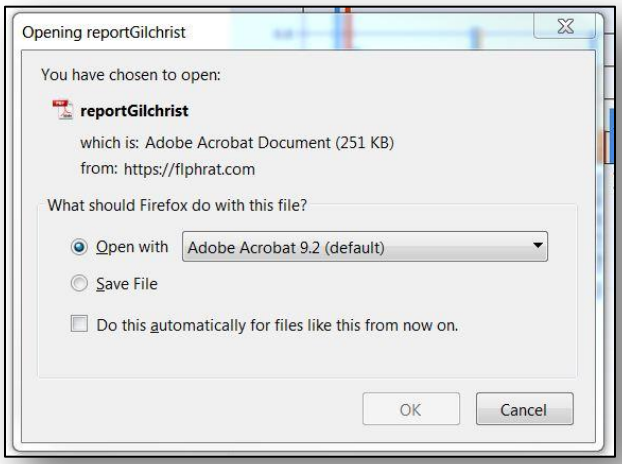
Saving Charts

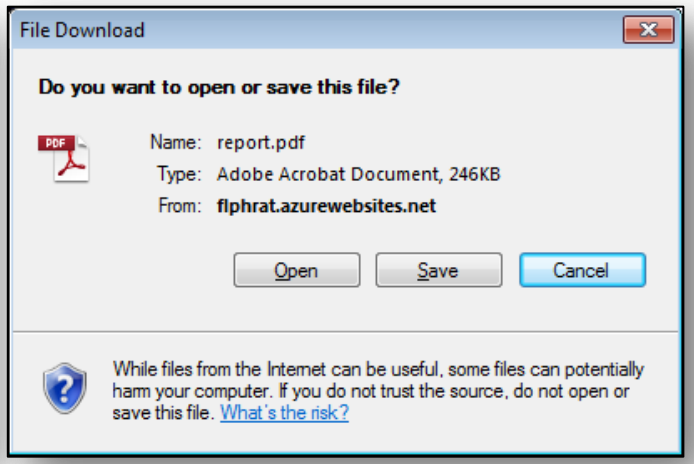
To save the PDF, click on the "Save" button, and then indicate where you would like the file saved and click on the "Save" button.



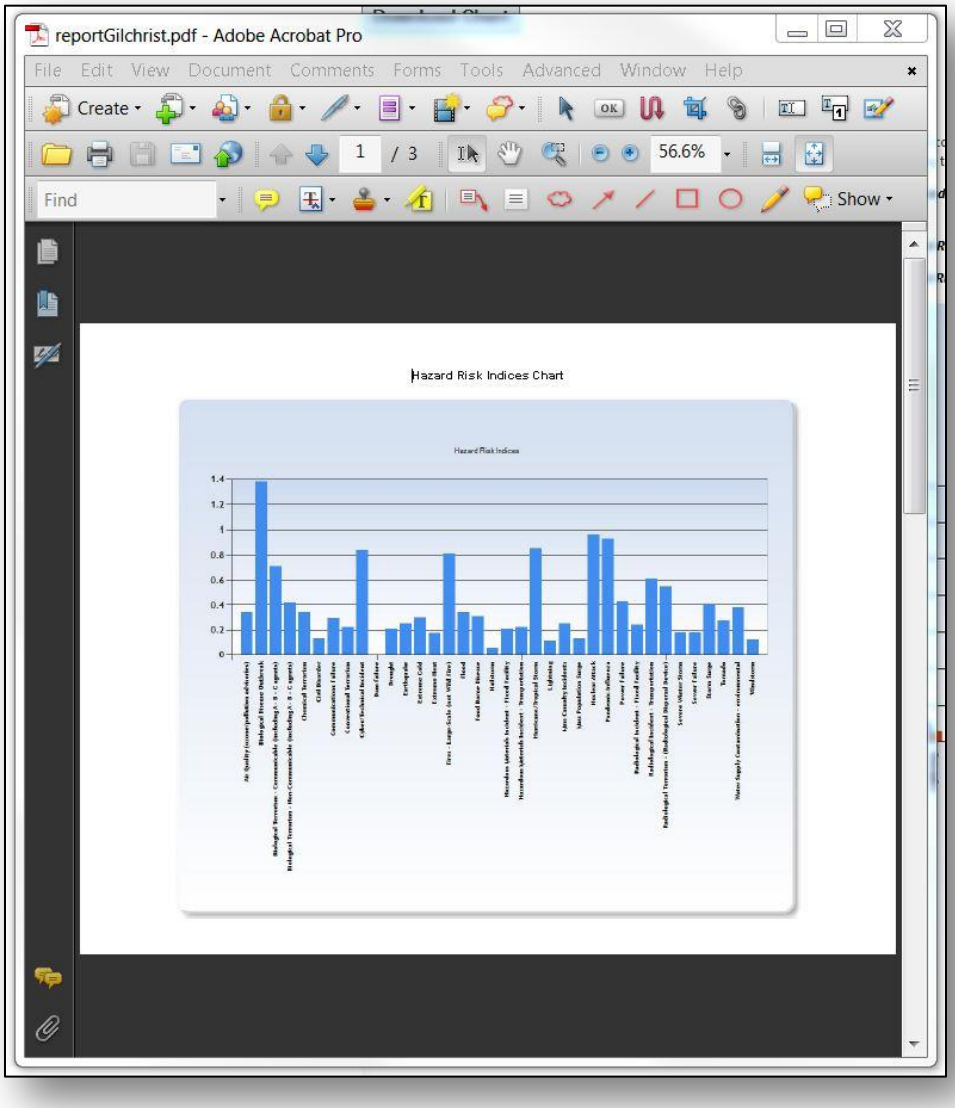
Open Charts

To open the charts as a PDF file, click on "Download All as PDF". The following dialog box should open. Now select the "Open" button (the pictures below show the dialog box as it appears in the Mozilla Firefox and Internet Explorer browsers).



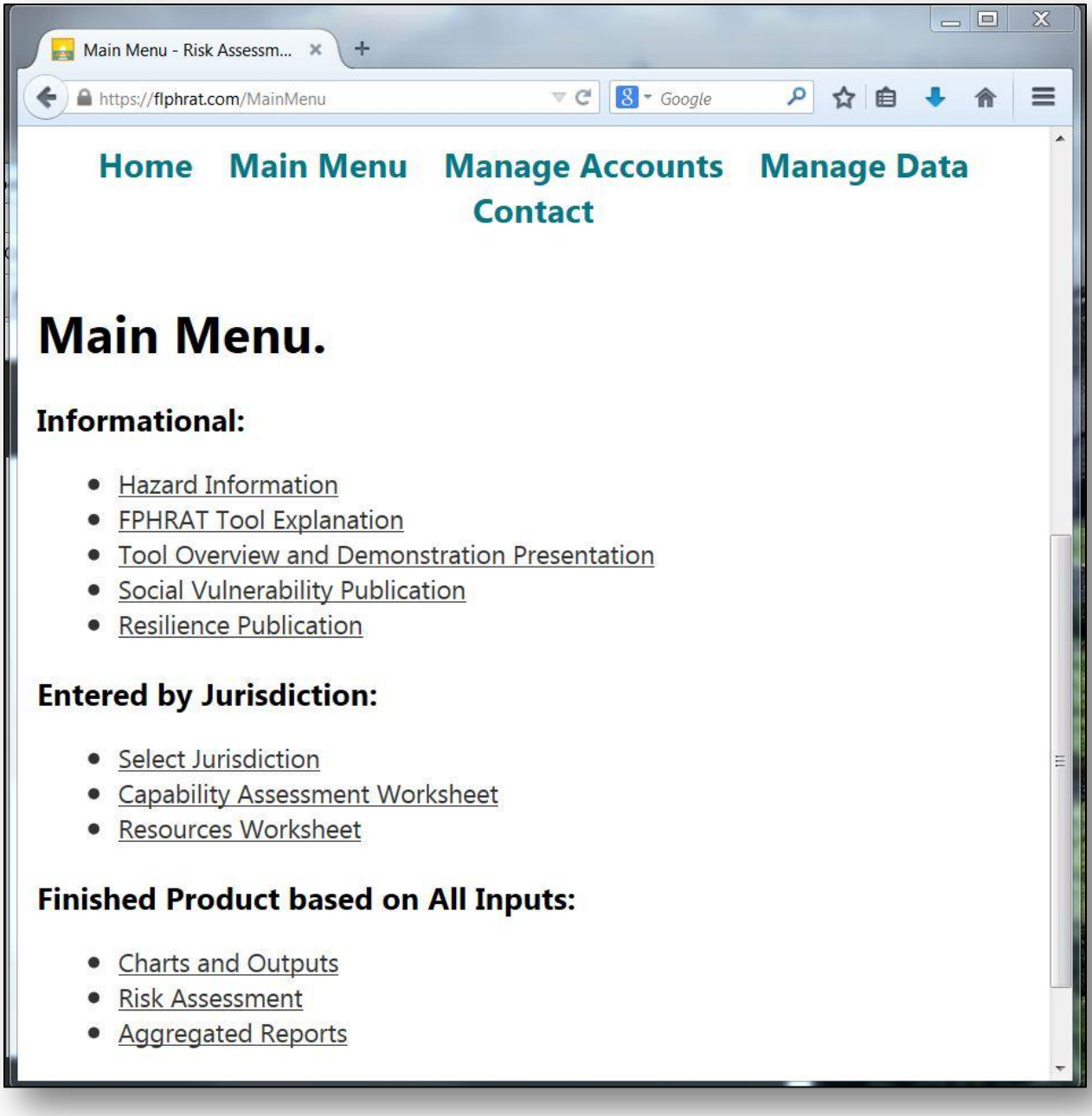


The PDF should then open in a separate window to be viewed.



Main Menu

The Main Menu provides quick links to different areas of the tool, excluding management sections that are only accessible by admin users. At times, a particular link may require to select a jurisdiction first and will first bring you to the "Select Jurisdiction" page before continue to a particular page.



Informational Section

This section contains informational materials for the user.

Hazard Information

The Hazard Information is a downloadable spreadsheet that contains information regarding 36 hazards with public health significance in Florida. The information in the table includes hazard definition, source of the data utilized in the tool, corresponding capabilities engaged preparing or responding to any given hazard, public health actions required to respond to any given hazard, and links to agencies or data sets.

Risk Assessment Explanation

This document describes the concepts and equations utilized to estimate the risk assessment and its measures for each county and hazard.

Tool Overview and Demonstration Presentation

This presentation was created by Dr. Chris Emrich from the Hazards and Vulnerability Research Institute (HVRI) of the University of South Carolina. It describes the tool and explains how the scores were calculated.

Social Vulnerability Publication

The *Social Vulnerability to Environmental Hazards* is an article published by members of the HVRI. It describes the factors affecting a jurisdiction's social vulnerability and the methodology used to estimate it, and provides evidence and scientific support for the tool.

Resilience Publication

Disaster Resilience Indicators for Benchmarking Baseline Conditions is an article published by members of the HVRI, and it describes the role that community resilience plays on mitigating consequences of disasters, and the methodology to determine a community's resilience.

Entered by Jurisdiction Section

Select Jurisdiction

This application of the tool allows users to select the jurisdiction to enter or edit information.

Capability Assessment Worksheet

The Main Menu allows selecting the *Capability Assessment Worksheet* in addition to the *Get Started* button at the home page.

Resources Worksheet

The Main Menu allows selecting the *Resources Worksheet* in addition to the *Get Started* button at the home page.

Finished Product Based on All Inputs.

Charts and Outputs

This feature is described previously in this document. Users can access it from the *Main Menu* or from the button at the bottom of the **Risk Assessment** page.

Risk Assessment

From the *Main Menu*, users can access the Risk Assessment table created after completing the Capability Assessment and Resources worksheets.

Aggregated Reports

The *Aggregated Reports* application allows users to see and export customized reports at the county, multicounty, regional, and state level.

Aggregated Reports and Data Interpretation

The *Aggregated Reports* application allows users to customize queries at the county, multicounty, regional, and state levels. The application is found in the section of the *Main Menu* called *Finished Product based on All Inputs*. Aggregated reports may take longer to download because the information is calculated on demand.

The data displayed in the pictures and reports is for educational purposes only. The *Aggregated Reports* are:

Capability Assessment

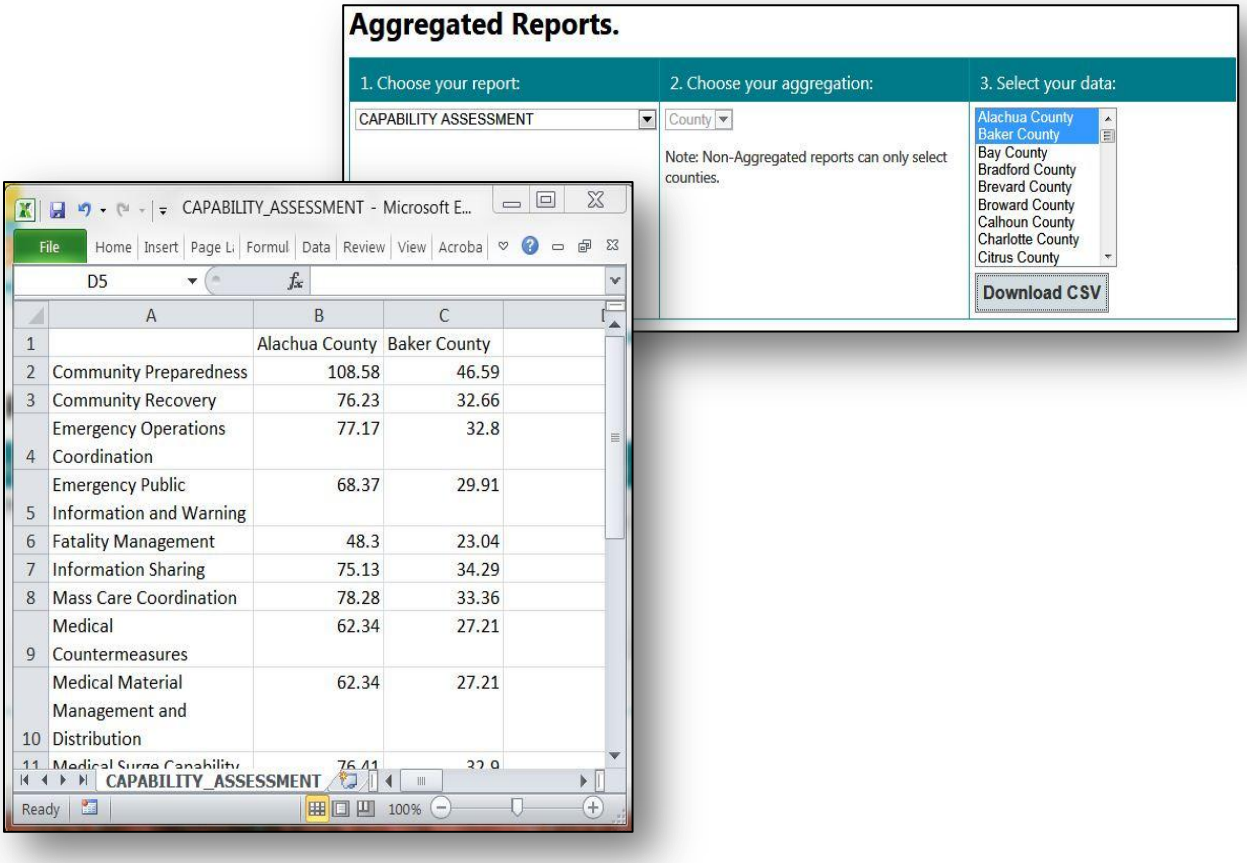
Description: The capability assessment value is calculated from the scores assigned to each capability function. Values are not aggregated.

Aggregation Levels: County.

Data: nonaggregated data for a single, multiple, or all counties.

Display / Downloads: Data is downloaded as a CSV file.

Interpretation: Indicates, in descending order, how well each capability can be performed overall.



Capability Assessment Aggregated

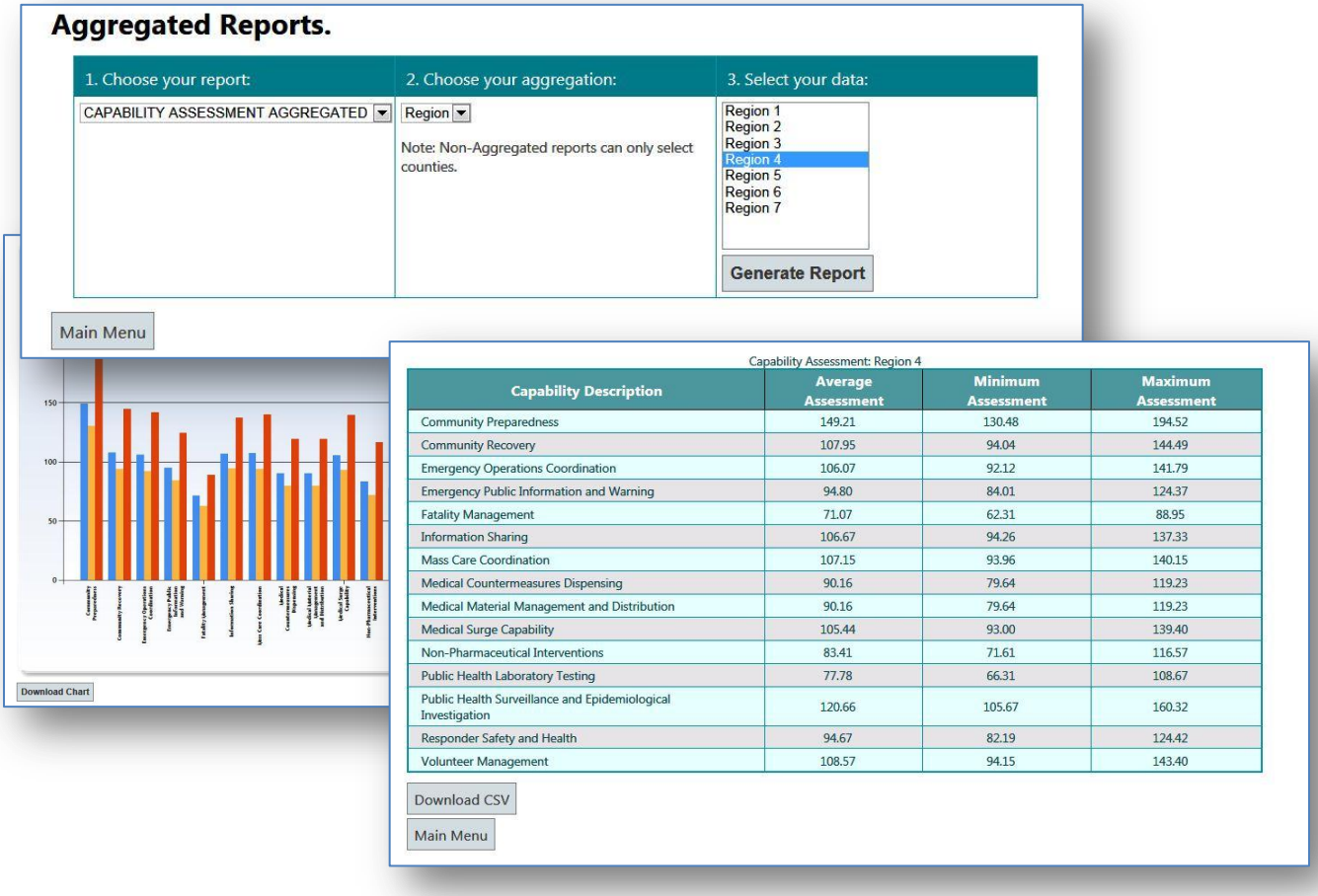
Description: Display of the aggregated values of the capability assessment for selected counties as an average, where average or mean average is the sum of data divided by the number of items in the data. It also displays the maximum and minimum values for a specific selection.

Aggregation Levels: County, region, and state.

Data: County (Selecting only one county will not generate a chart and the values will be similar to the nonaggregated Capability Assessment), region (aggregated data for one or more regions) and state (aggregated data for all counties).

Display / Downloads: This application displays a chart and a table. The chart is downloadable as a JPG file, and the table as a CSV file.

Interpretation: Average measure of how well each capability is performed by a selected group of counties. The higher numbers reflect higher performance.



Capability Description	Average Assessment	Minimum Assessment	Maximum Assessment
Community Preparedness	149.21	130.48	194.52
Community Recovery	107.95	94.04	144.49
Emergency Operations Coordination	106.07	92.12	141.79
Emergency Public Information and Warning	94.80	84.01	124.37
Fatality Management	71.07	62.31	88.95
Information Sharing	106.67	94.26	137.33
Mass Care Coordination	107.15	93.96	140.15
Medical Countermeasures Dispensing	90.16	79.64	119.23
Medical Material Management and Distribution	90.16	79.64	119.23
Medical Surge Capability	105.44	93.00	139.40
Non-Pharmaceutical Interventions	83.41	71.61	116.57
Public Health Laboratory Testing	77.78	66.31	108.67
Public Health Surveillance and Epidemiological Investigation	120.66	105.67	160.32
Responder Safety and Health	94.67	82.19	124.42
Volunteer Management	108.57	94.15	143.40

Capability Assessment Worksheet

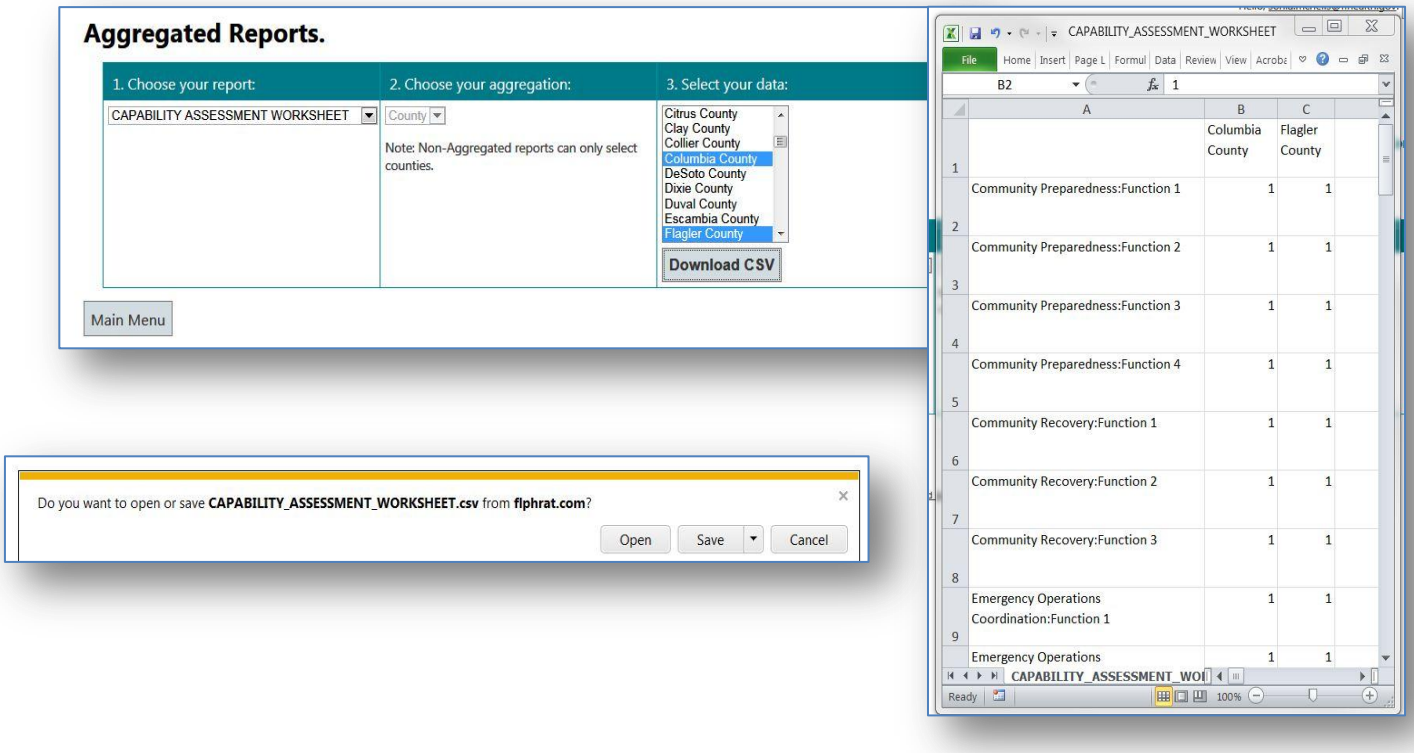
Description: Display of the scores assigned by jurisdictions to the capability functions. This report does not aggregate data. The picture below depicts scores preset to the minimum value: 1. No ability / capacity. Jurisdictions will assess each capability function and assign a true score.

Aggregation Levels: County.

Data: One, multiple, or all counties.

Display / Downloads: CSV file.

Interpretation: Scores from the assessment of each capability function. Data is displayed on a table. Jurisdictions will be able to use the information for further analysis and comparison, for example, creating a multicounty or state average of the scores. The data in the Capability Assessment worksheet is not the same as the data produced by the Capability Assessment report.



Capability Gap

Description: Display of the gap between a "capability goal" and a "capability assessment". This report does not aggregate data. The reference for the capability goal is the maximum score attainable; the "capability goal" is expressed as the Hazard Risk Weighted Capability Goal, and the "capability assessment" as the Hazard Risk Weighted Capability Assessment, both values are mathematically calculated.

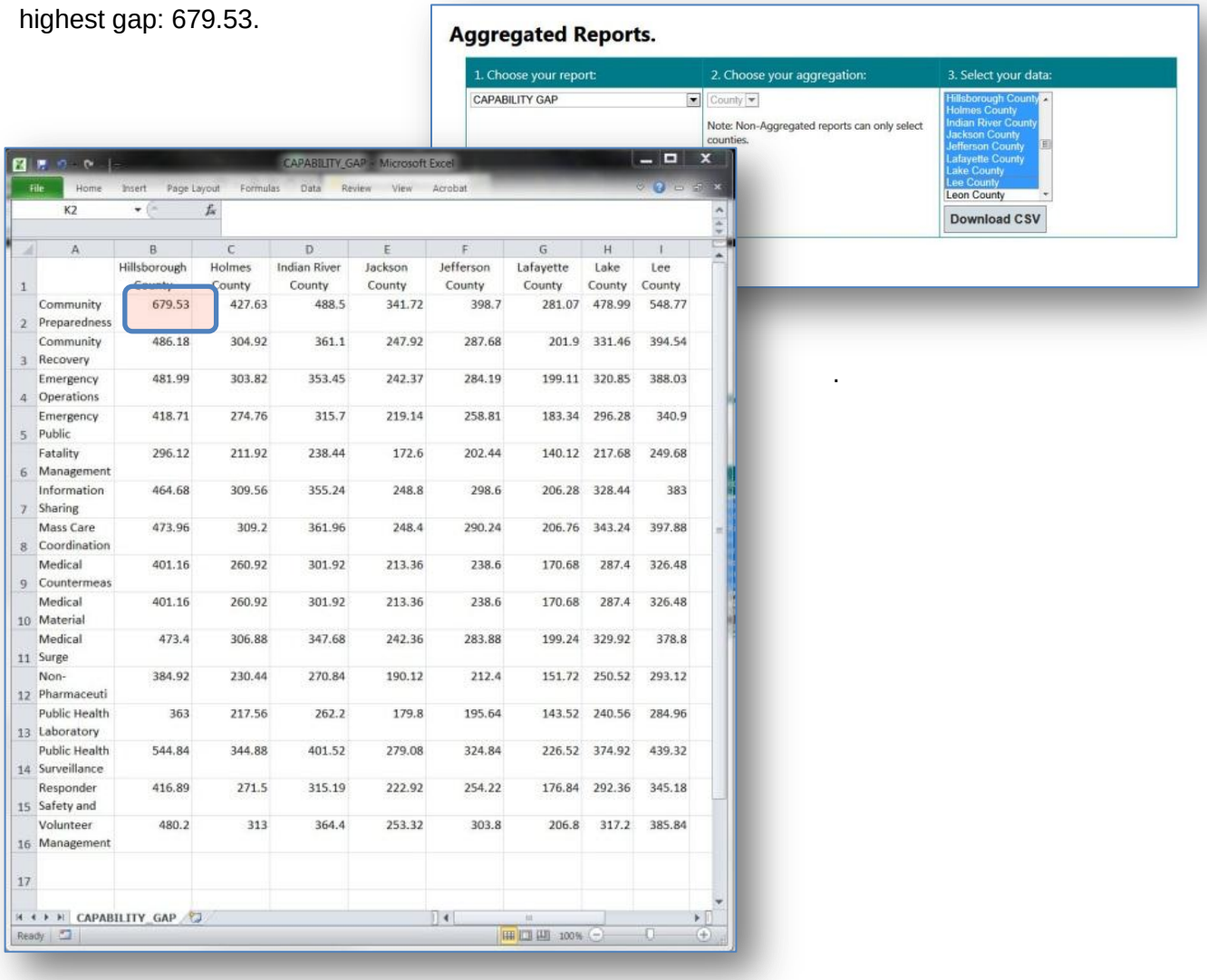
Aggregation Levels: County.

Data: One, multiple or all counties.

Display / Downloads: CSV file.

Interpretation: Gap between how a capability is performed and the maximum level of performance. The gap takes into account the capability scores, assigned by a jurisdiction, in a complex mathematical equation.

The largest gap is represented by the highest value. In the example, the community preparedness capability in Hillsborough County has the highest gap: 679.53.



	Hillsborough County	Holmes County	Indian River County	Jackson County	Jefferson County	Lafayette County	Lake County	Lee County
Community Preparedness	679.53	427.63	488.5	341.72	398.7	281.07	478.99	548.77
Community Recovery	486.18	304.92	361.1	247.92	287.68	201.9	331.46	394.54
Emergency Operations	481.99	303.82	353.45	242.37	284.19	199.11	320.85	388.03
Emergency Public	418.71	274.76	315.7	219.14	258.81	183.34	296.28	340.9
Fatality Management	296.12	211.92	238.44	172.6	202.44	140.12	217.68	249.68
Information Sharing	464.68	309.56	355.24	248.8	298.6	206.28	328.44	383
Mass Care Coordination	473.96	309.2	361.96	248.4	290.24	206.76	343.24	397.88
Medical Countermeas	401.16	260.92	301.92	213.36	238.6	170.68	287.4	326.48
Medical Material	401.16	260.92	301.92	213.36	238.6	170.68	287.4	326.48
Medical Surge	473.4	306.88	347.68	242.36	283.88	199.24	329.92	378.8
Non-Pharmaceuti	384.92	230.44	270.84	190.12	212.4	151.72	250.52	293.12
Public Health Laboratory	363	217.56	262.2	179.8	195.64	143.52	240.56	284.96
Public Health Surveillance	544.84	344.88	401.52	279.08	324.84	226.52	374.92	439.32
Responder Safety and	416.89	271.5	315.19	222.92	254.22	176.84	292.36	345.18
Volunteer Management	480.2	313	364.4	253.32	303.8	206.8	317.2	385.84

Capability Gap Aggregated

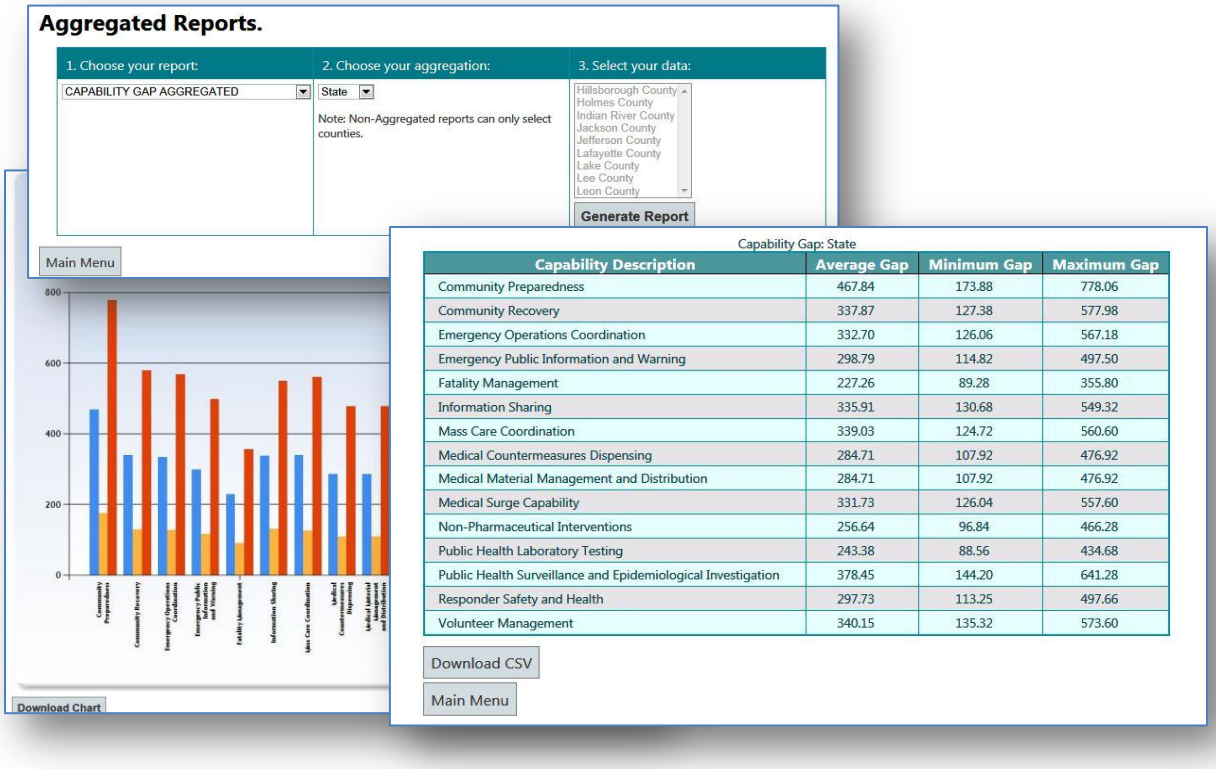
Description: This report aggregates the capability gap data for selected jurisdictions and calculates a unique value for all, expressed as average, where average or mean average is the sum of data divided by the number of items in the data. It also displays the maximum and minimum values for a specific selection.

Aggregation Levels: County, region, and state

Data: Aggregates data for multiple counties, one or more regions, and state.

Display / Downloads: Generates a chart downloadable as a JPG file, and a report exportable as a CSV file.

Interpretation: Average of the gap values between the current capability's performance and the maximum level of performance attainable. The largest gap is represented by the highest value. In the example below, the community preparedness capability has the highest gap average at the state level: 467.84.



Capability Hazard Component

Description: It is a nonaggregated report. This report provides information for each county summarizing the relationship between the capability functions and their relationship or involvement with the 36 hazards, the capability's Relative Intensity of Engagement (RIE) score, the Community Preparedness Capability Hazard Component, and the Average of the Capability Assessment Score assigned by the jurisdiction.

Aggregation Levels: County.

Data: Aggregates data for one, multiple or all counties.

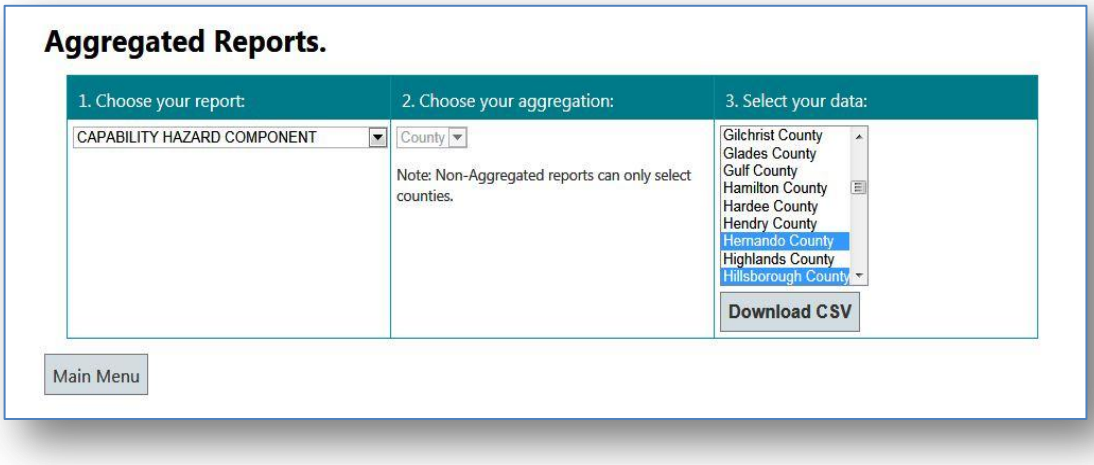
Display / Downloads: Generates a report exportable as a CSV file.

Interpretation: *Capability functions* are assigned a value of 1 if they are directly related to preparedness and response for each specific hazard, and a value of 0 if the functions are not involved in the response to a specific hazard.

Preparedness Relative Intensity of Engagement (RIE): has a value of 0-4 for each capability and hazard. It measures the public health relevance of a capability to a hazard response. The scores are: 0 (very limited intensity level of this public health preparedness capability engagement for this hazard), 1 (low intensity level), 2 (moderate intensity level), 3 (high intensity level), and 4 (extreme intensity level).

Community Preparedness Capability Hazard Component: it is the sum of the RIE and Average Function Involvement. For example, in Hernando County, the Community Preparedness Hazard Component for Air Quality is 4 + (1+1+0+1/4) = 4 + 0.75 = 4.75.

Capability Assessment: is the average of the scores assigned to the functions of each capability.



	A	B	C	D	E	F	G	H	I
1		hazard_name	Community Preparedness-Function 1	Community Preparedness-Function 2	Community Preparedness-Function 3	Community Preparedness-Function 4	Community Preparedness-RIE	Community Preparedness-Capability Hazard Component	capability_1_assessment
2	Hernando County	Air Quality (ozone/pollution	1	1	0	1	4	4.75	1
3	Hernando County	Biological Disease Outbreak	1	1	1	1	4	5	1
4	Hernando County	Biological Terrorism - Communicable (including A - B - C agents)	1	1	1	1	4	5	1
5	Hernando County	Biological Terrorism - Non-Communicable (including A - B - C agents)	1	1	1	1	4	5	1
6	Hernando County	Chemical Terrorism	1	1	1	1	4	5	1
7	Hernando County	Civil Disorder	1	0	1	1	4	4.75	1
8	Hernando County	Communications Failure	1	1	1	1	4	5	1
9	Hernando County	Conventional Terrorism	1	1	1	1	4	5	1
10	Hernando County	Cyber/Technical Incident	1	0	0	0	4	4.25	1
11	Hernando County	Dam failure	1	0	1	1	4	4.75	1
12	Hernando County	Drought	1	0	1	1	4	4.75	1
13	Hernando County	Earthquake	1	1	1	1	4	5	1
14	Hernando County	Extreme Cold	1	1	1	1	4	5	1
15	Hernando County	Extreme Heat	1	1	1	1	4	5	1
16	Hernando County	Fires - Large-Scale (not Wild Fire)	1	0	0	0	4	4.25	1

CAPABILITY_HAZARD_COMPONENT

Hazard Risk Index

Description: It is a value (score) of the overall risk for each county hazard. This score is a component of the Risk Assessment matrix. It is different from the Residual Risk Index which includes mitigation factors. This score is calculated as follows:

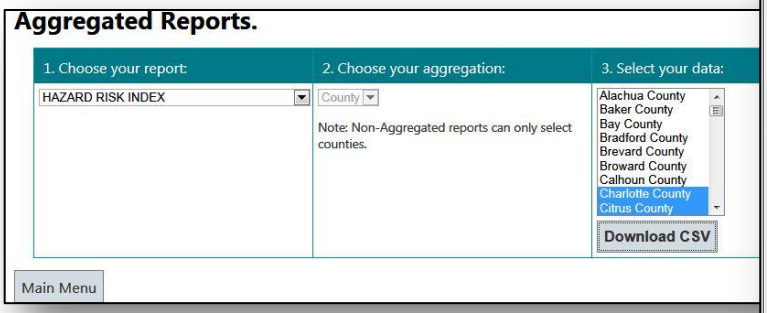
> ***Probability* × *Social Vulnerability* × *CIKR* × *(Public Health + Healthcare Impact + Behavioral Health Impact)***

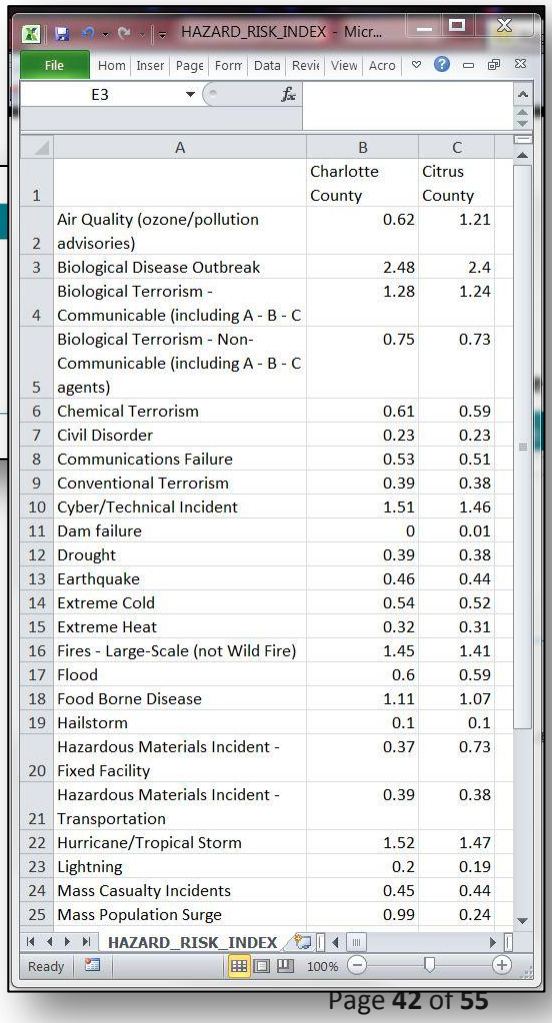
Aggregation Levels: County

Data: Displays non-aggregated data for one, multiple, or all counties.

Display / Downloads: Generates a CSV file.

Interpretation: Hazard Risk is the likelihood of a given hazard of a given level causing a particular level of loss or damage. The hazard risk index is a complex value that takes into account the hazard probability for a given county, the social vulnerability of the county, and the combined scores from the public health impact, healthcare impact, and behavioral health impact at a state level. The Critical Infrastructure and Key Resources Index (CIKR) has not been calculated and its value is one for all counties; it will be developed in the future. The index's scores range from 0-4, where 4 represents the highest risk.




HAZARD_RISK_INDEX - Micr...

E3

	A	B	C
1		Charlotte County	Citrus County
2	Air Quality (ozone/pollution advisories)	0.62	1.21
3	Biological Disease Outbreak	2.48	2.4
4	Biological Terrorism - Communicable (including A - B - C	1.28	1.24
5	Biological Terrorism - Non-Communicable (including A - B - C agents)	0.75	0.73
6	Chemical Terrorism	0.61	0.59
7	Civil Disorder	0.23	0.23
8	Communications Failure	0.53	0.51
9	Conventional Terrorism	0.39	0.38
10	Cyber/Technical Incident	1.51	1.46
11	Dam failure	0	0.01
12	Drought	0.39	0.38
13	Earthquake	0.46	0.44
14	Extreme Cold	0.54	0.52
15	Extreme Heat	0.32	0.31
16	Fires - Large-Scale (not Wild Fire)	1.45	1.41
17	Flood	0.6	0.59
18	Food Borne Disease	1.11	1.07
19	Hailstorm	0.1	0.1
20	Hazardous Materials Incident - Fixed Facility	0.37	0.73
21	Hazardous Materials Incident - Transportation	0.39	0.38
22	Hurricane/Tropical Storm	1.52	1.47
23	Lightning	0.2	0.19
24	Mass Casualty Incidents	0.45	0.44
25	Mass Population Surge	0.99	0.24

HAZARD_RISK_INDEX

Ready

Hazard Risk Index Aggregated

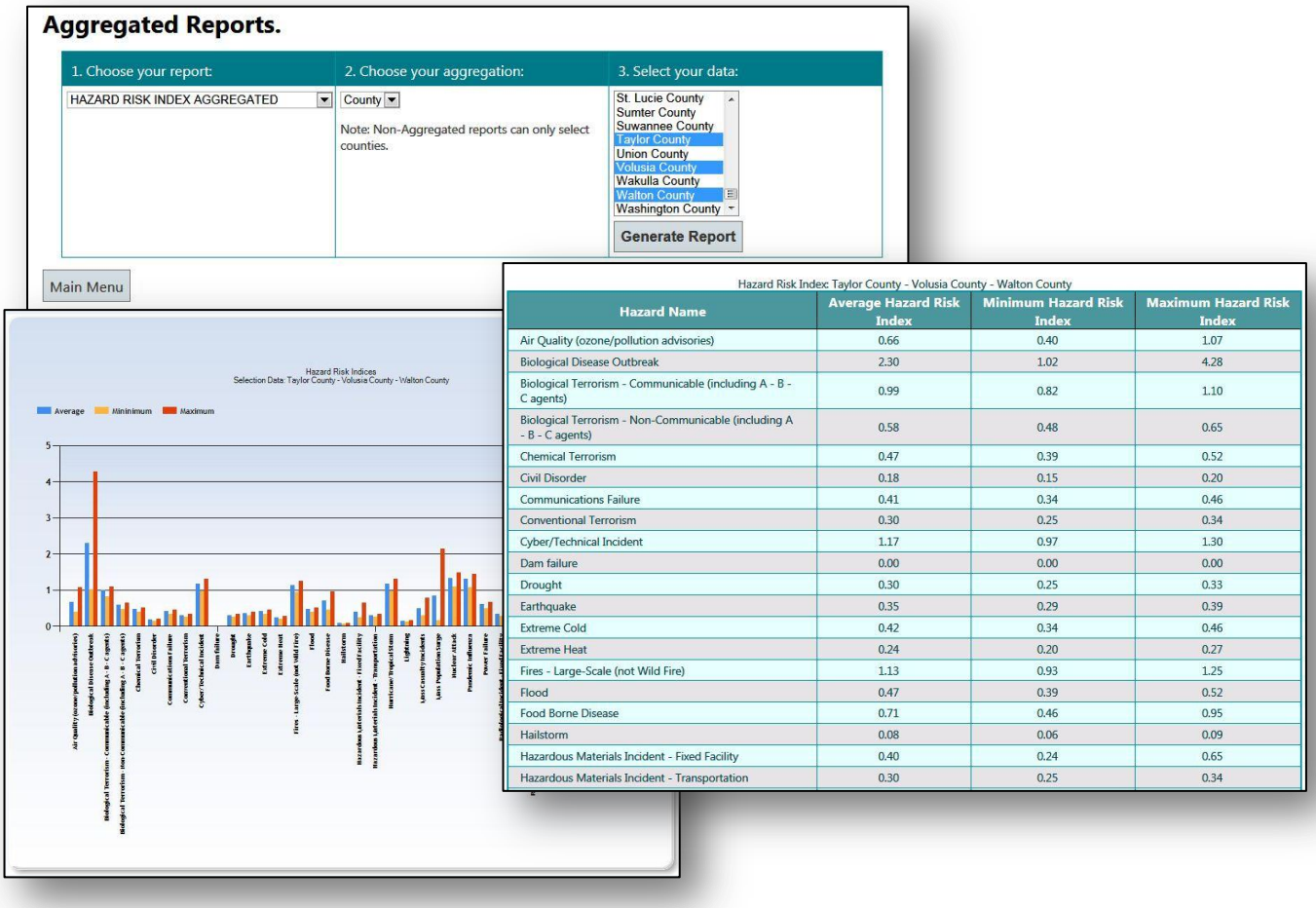
Description: Hazard Risk indexes for multiple counties, region or state are aggregated as an average. Also, the maximum and minimum values are calculated.

Aggregation Levels: County, region, and state.

Data: Aggregates data for multiple counties, one or more regions, and state.

Display / Downloads: Generates a chart downloadable as a JPG file, and a report exportable as a CSV file.

Interpretation: The aggregated indexes represent the likelihood that a given hazard will cause a certain level of loss or damage in the selected jurisdictions. The aggregated index scores range from 0-24, where 24 represents the highest risk average.



Hazard Name	Average Hazard Risk Index	Minimum Hazard Risk Index	Maximum Hazard Risk Index
Air Quality (ozone/pollution advisories)	0.66	0.40	1.07
Biological Disease Outbreak	2.30	1.02	4.28
Biological Terrorism - Communicable (including A - B - C agents)	0.99	0.82	1.10
Biological Terrorism - Non-Communicable (including A - B - C agents)	0.58	0.48	0.65
Chemical Terrorism	0.47	0.39	0.52
Civil Disorder	0.18	0.15	0.20
Communications Failure	0.41	0.34	0.46
Conventional Terrorism	0.30	0.25	0.34
Cyber/Technical Incident	1.17	0.97	1.30
Dam failure	0.00	0.00	0.00
Drought	0.30	0.25	0.33
Earthquake	0.35	0.29	0.39
Extreme Cold	0.42	0.34	0.46
Extreme Heat	0.24	0.20	0.27
Fires - Large-Scale (not Wild Fire)	1.13	0.93	1.25
Flood	0.47	0.39	0.52
Food Borne Disease	0.71	0.46	0.95
Hailstorm	0.08	0.06	0.09
Hazardous Materials Incident - Fixed Facility	0.40	0.24	0.65
Hazardous Materials Incident - Transportation	0.30	0.25	0.34

Resource Gap (resource readiness gap)

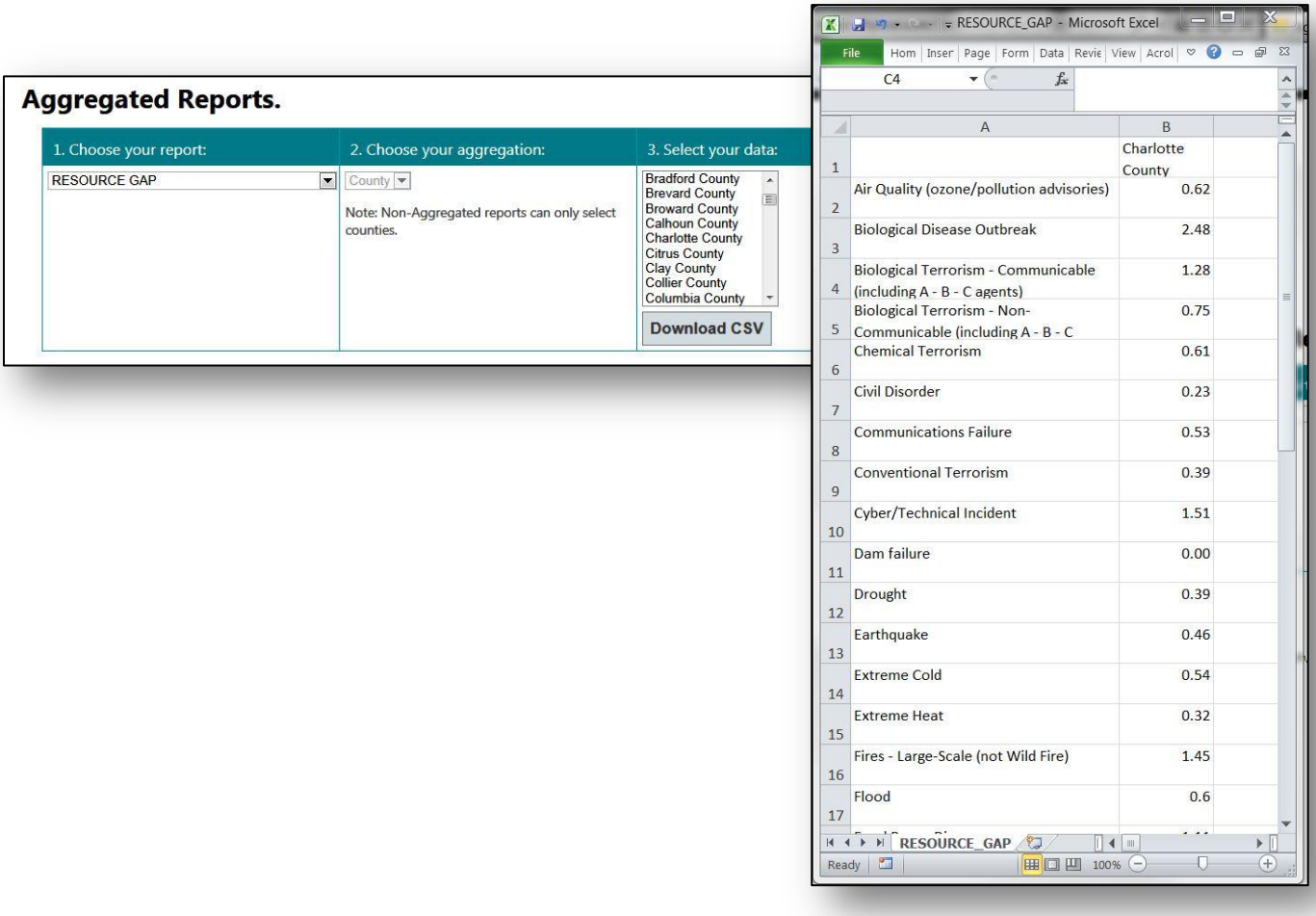
Description: The values in this report represent the relationship between each hazard's risk index and the resources needed to address the hazard (represented by the resource assessment score).

Aggregation Levels: County.

Data: Displays nonaggregated data for one, multiple, or all counties.

Display / Downloads: Generates a CSV file.

Interpretation: In addition to the resources available, the resource gap represents the resources needed to counteract a hazard's risk. In order to calculate the resource gap, it is necessary to look at the resource assessment in relation to the hazard's risk (this relationship is called Resource score in proportion of hazard risk index). Subsequently, the resource gap is calculated subtracting the hazard risk index minus the "Resource Score in Proportion of Hazard Risk Index".



	A	B
1		Charlotte County
2	Air Quality (ozone/pollution advisories)	0.62
3	Biological Disease Outbreak	2.48
4	Biological Terrorism - Communicable (including A - B - C agents)	1.28
5	Biological Terrorism - Non-Communicable (including A - B - C	0.75
6	Chemical Terrorism	0.61
7	Civil Disorder	0.23
8	Communications Failure	0.53
9	Conventional Terrorism	0.39
10	Cyber/Technical Incident	1.51
11	Dam failure	0.00
12	Drought	0.39
13	Earthquake	0.46
14	Extreme Cold	0.54
15	Extreme Heat	0.32
16	Fires - Large-Scale (not Wild Fire)	1.45
17	Flood	0.6

Resource Gap Aggregated

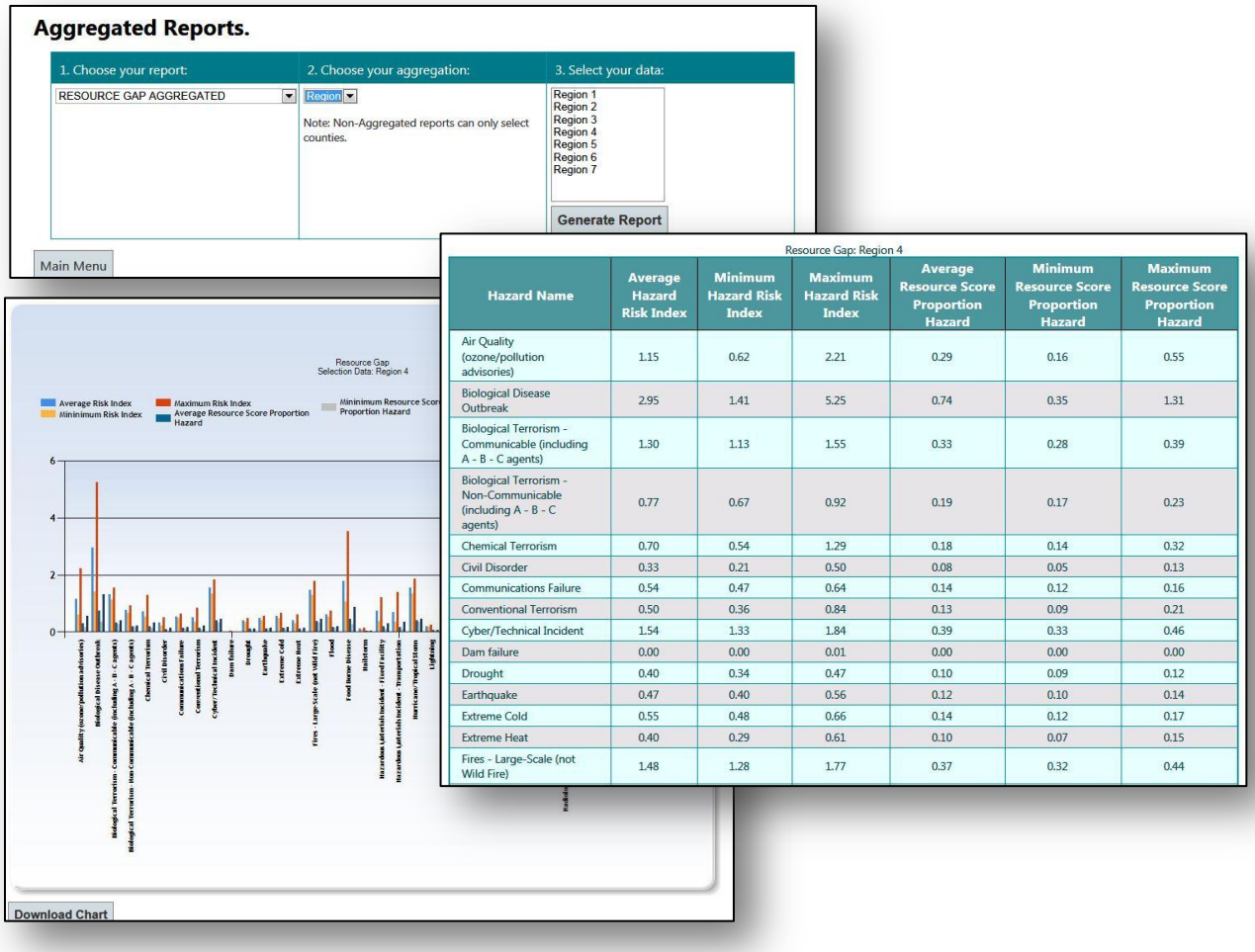
Description: Average of the resource score in proportion of the hazard risk index for the selected jurisdictions. This report also provides the maximum and minimum values.

Aggregation Levels: County, region, and state.

Data: Aggregates data for multiple counties, one or more regions, and state.

Display / Downloads: Generates a chart downloadable as a JPG file, and a report exportable as a CSV file.

Interpretation: Average value of the resource assessment in relation to the hazard's risk (this relationship is called Resource Score in Proportion of Hazard Risk Index).



Resource Gap: Region 4

Hazard Name	Average Hazard Risk Index	Minimum Hazard Risk Index	Maximum Hazard Risk Index	Average Resource Score Proportion Hazard	Minimum Resource Score Proportion Hazard	Maximum Resource Score Proportion Hazard
Air Quality (ozone/pollution advisories)	1.15	0.62	2.21	0.29	0.16	0.55
Biological Disease Outbreak	2.95	1.41	5.25	0.74	0.35	1.31
Biological Terrorism - Communicable (including A - B - C agents)	1.30	1.13	1.55	0.33	0.28	0.39
Biological Terrorism - Non-Communicable (including A - B - C agents)	0.77	0.67	0.92	0.19	0.17	0.23
Chemical Terrorism	0.70	0.54	1.29	0.18	0.14	0.32
Civil Disorder	0.33	0.21	0.50	0.08	0.05	0.13
Communications Failure	0.54	0.47	0.64	0.14	0.12	0.16
Conventional Terrorism	0.50	0.36	0.84	0.13	0.09	0.21
Cyber/Technical Incident	1.54	1.33	1.84	0.39	0.33	0.46
Dam failure	0.00	0.00	0.01	0.00	0.00	0.00
Drought	0.40	0.34	0.47	0.10	0.09	0.12
Earthquake	0.47	0.40	0.56	0.12	0.10	0.14
Extreme Cold	0.55	0.48	0.66	0.14	0.12	0.17
Extreme Heat	0.40	0.29	0.61	0.10	0.07	0.15
Fires - Large-Scale (not Wild Fire)	1.48	1.28	1.77	0.37	0.32	0.44

Resources Worksheet

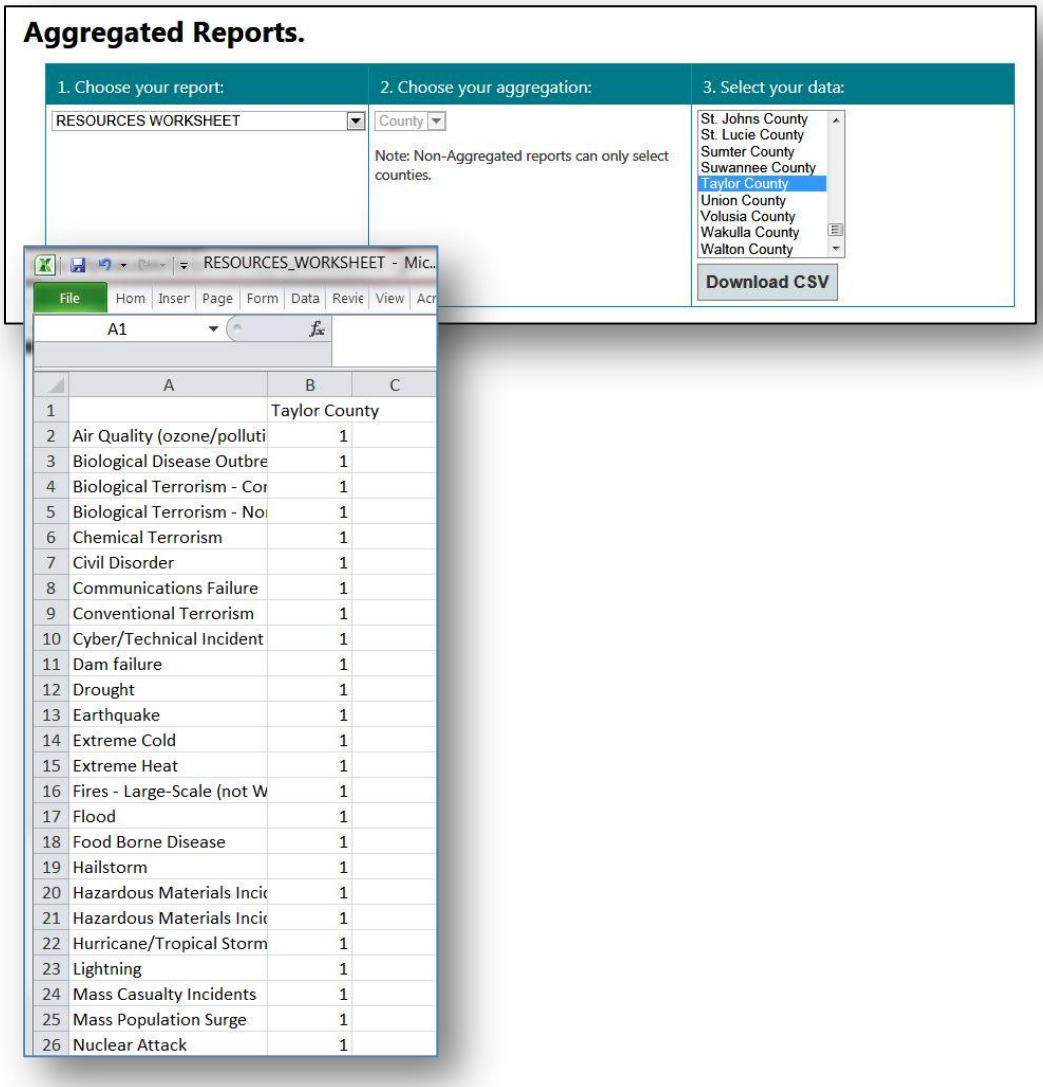
Description: This report displays the scores entered into the Resources Worksheet. Each jurisdiction assigned a "Needed Resource Score" to each of the 36 hazards. This data is not aggregated, but allows displaying data to compare counties.

Aggregation Levels: County.

Data: Displays nonaggregated data for one, multiple or all counties.

Display / Downloads: Generates a CSV file.

Interpretation: Assessment of the status of the resources needed to respond to each hazard. The scores are as follows: Fully in place: 76%-100% of needed resources accessible (4 points), substantially in place: 51%-75% of needed resources accessible (3 points), partially in place: 25%-50% of needed resources accessible (2 points), and less than partially in place: less than 25% of needed resources accessible (1 point).



	A	B	C
1		Taylor County	
2	Air Quality (ozone/polluti	1	
3	Biological Disease Outbre	1	
4	Biological Terrorism - Cor	1	
5	Biological Terrorism - No	1	
6	Chemical Terrorism	1	
7	Civil Disorder	1	
8	Communications Failure	1	
9	Conventional Terrorism	1	
10	Cyber/Technical Incident	1	
11	Dam failure	1	
12	Drought	1	
13	Earthquake	1	
14	Extreme Cold	1	
15	Extreme Heat	1	
16	Fires - Large-Scale (not W	1	
17	Flood	1	
18	Food Borne Disease	1	
19	Hailstorm	1	
20	Hazardous Materials Inci	1	
21	Hazardous Materials Inci	1	
22	Hurricane/Tropical Storm	1	
23	Lightning	1	
24	Mass Casualty Incidents	1	
25	Mass Population Surge	1	
26	Nuclear Attack	1	

Resources Worksheet Aggregated

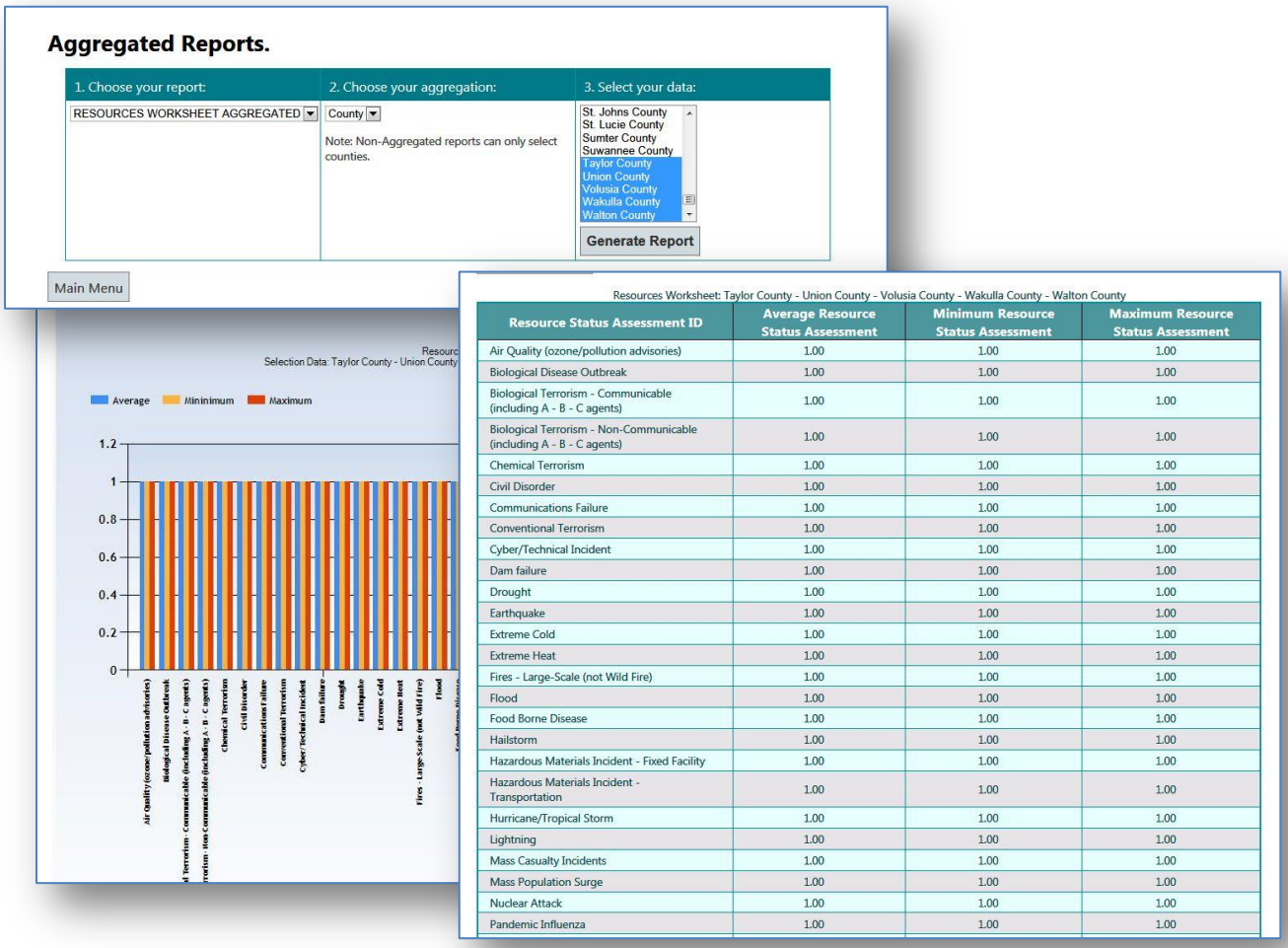
Description: Average of the Resources Worksheet scores entered in the worksheet for a selected group of jurisdictions.

Aggregation Levels: County, region, and state

Data: Aggregates data for multiple counties, one or more regions, and state.

Display / Downloads: Generates a chart downloadable as a JPG file, and a report exportable as a CSV file.

Interpretation: Average value of the *Needed Resource Scores* entered in the Resources Worksheet by jurisdictions. In this report, the values are interpreted as the *Average Resource Status Assessment*.



Resource Status Assessment ID	Average Resource Status Assessment	Minimum Resource Status Assessment	Maximum Resource Status Assessment
Air Quality (ozone/pollution advisories)	1.00	1.00	1.00
Biological Disease Outbreak	1.00	1.00	1.00
Biological Terrorism - Communicable (including A - B - C agents)	1.00	1.00	1.00
Biological Terrorism - Non-Communicable (including A - B - C agents)	1.00	1.00	1.00
Chemical Terrorism	1.00	1.00	1.00
Civil Disorder	1.00	1.00	1.00
Communications Failure	1.00	1.00	1.00
Conventional Terrorism	1.00	1.00	1.00
Cyber/Technical Incident	1.00	1.00	1.00
Dam failure	1.00	1.00	1.00
Drought	1.00	1.00	1.00
Earthquake	1.00	1.00	1.00
Extreme Cold	1.00	1.00	1.00
Extreme Heat	1.00	1.00	1.00
Fires - Large-Scale (not Wild Fire)	1.00	1.00	1.00
Flood	1.00	1.00	1.00
Food Borne Disease	1.00	1.00	1.00
Hailstorm	1.00	1.00	1.00
Hazardous Materials Incident - Fixed Facility	1.00	1.00	1.00
Hazardous Materials Incident - Transportation	1.00	1.00	1.00
Hurricane/Tropical Storm	1.00	1.00	1.00
Lightning	1.00	1.00	1.00
Mass Casualty Incidents	1.00	1.00	1.00
Mass Population Surge	1.00	1.00	1.00
Nuclear Attack	1.00	1.00	1.00
Pandemic Influenza	1.00	1.00	1.00

Risk Assessment

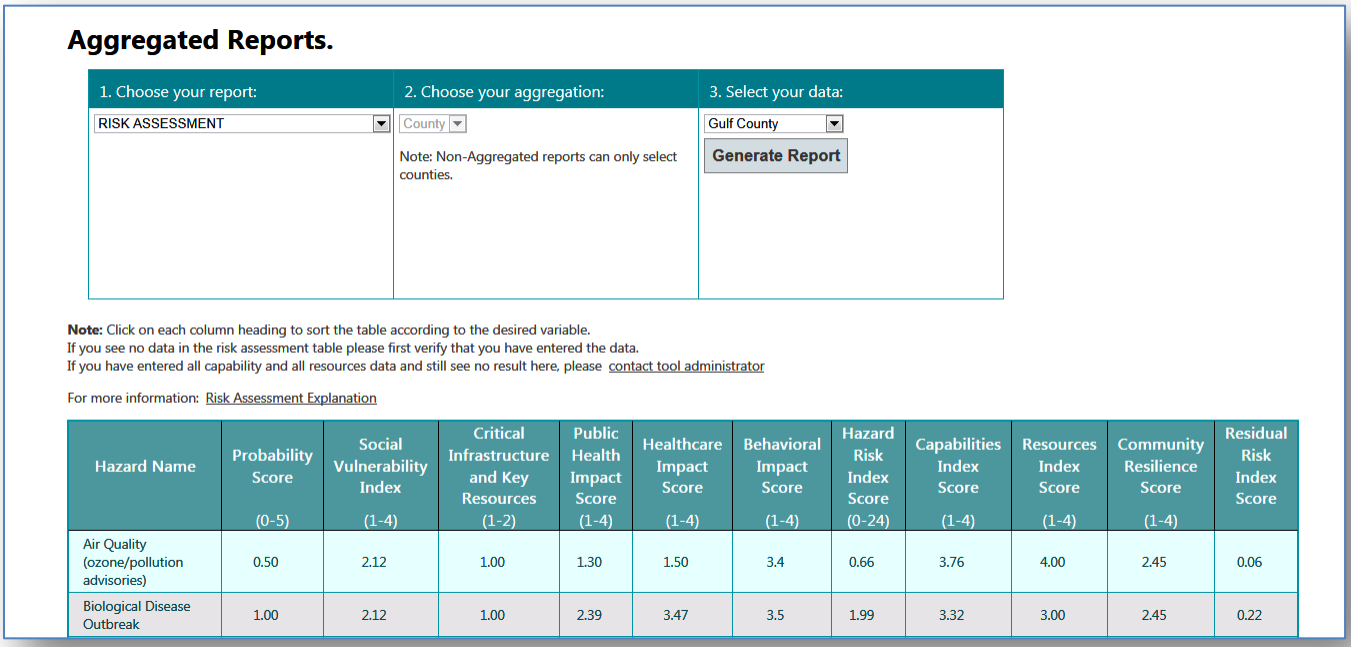
Description: Displays the Risk Assessment Matrix.

Aggregation Levels: County.

Data: County.

Display / Downloads: Matrix is downloadable as a CSV file.

Interpretation: Each component of the Risk Assessment Matrix is described in Attachment 1.



Aggregated Reports.

1. Choose your report:	2. Choose your aggregation:	3. Select your data:
RISK ASSESSMENT	County	Gulf County
	Note: Non-Aggregated reports can only select counties.	Generate Report

Note: Click on each column heading to sort the table according to the desired variable.
If you see no data in the risk assessment table please first verify that you have entered the data.
If you have entered all capability and all resources data and still see no result here, please contact tool administrator

For more information: Risk Assessment Explanation

Hazard Name	Probability Score (0-5)	Social Vulnerability Index (1-4)	Critical Infrastructure and Key Resources (1-2)	Public Health Impact Score (1-4)	Healthcare Impact Score (1-4)	Behavioral Impact Score (1-4)	Hazard Risk Index Score (0-24)	Capabilities Index Score (1-4)	Resources Index Score (1-4)	Community Resilience Score (1-4)	Residual Risk Index Score
Air Quality (ozone/pollution advisories)	0.50	2.12	1.00	1.30	1.50	3.4	0.66	3.76	4.00	2.45	0.06
Biological Disease Outbreak	1.00	2.12	1.00	2.39	3.47	3.5	1.99	3.32	3.00	2.45	0.22

Attachment 1. Risk Assessment Explanation

The risk assessment sheet provides a summary of the many pieces of the Public Health Risk Assessment Tool. Each of these elements is described here:

Hazard

Name of the hazard for which planning must account for.

Probability Score (0-5)

Hazard probability is a quantitative description of the likely occurrence of a particular event represented by the percent chance something will occur. This is also known as likelihood of occurrence. It is important for all users to understand not all events lend themselves to frequencies (e.g. terrorism) so subject matter experts used proxies. For example, subject matter experts identified of other types of funding that are provided for different threat assessments was used by to determine the likelihood of occurrence. Frequency scores can be modified by the jurisdiction, with documentation to support these changes. Frequencies were converted to the Likert scale (0-5) below:

5- Almost Certain: Is expected to occur in most circumstances; and /or high level of recorded incidents and/or strong anecdotal evidence and/or strong likelihood the event will recur; and or great opportunity, reason, or means to occur; has a 90% chance or greater of occurring once in a given year; may occur one or more times annually.

4- Likely: Will probably occur in most circumstances; and/or regular recorded incidents and strong anecdotal evidence; and/or considerable opportunity, reason, or means to occur; has a 50% - 89% chance of occurring once in a given year; may occur once every 2 years.

3- Possible: Might occur at some time; and/or few, infrequent, random recorded incidents or little anecdotal evidence; and/or very few incidents in associated or comparable organizations, facilities, or communities; and/or some opportunity, reason, or means to occur; has a 14% - 49% chance of occurring in a given year; may occur once every 3-7 years.

2- Unlikely: Is not expected to occur; and/or very few recorded incidents or anecdotal evidence; and/or no recent incidents in associated organizations, facilities, or communities; and/or little opportunity, reason, or means to occur; has a 4% - 13% chance of occurring in a given year; may occur once every 8-25 years.

1- Rare: May occur only in exceptional circumstances; has a less than 4% chance of occurring in a given year; may occur once every 26 years or more.

0- Not Possible: There is a zero or near zero chance the hazard will occur in the jurisdiction.

Social Vulnerability Index (1-4)

A Jurisdiction's Social Vulnerability is its score from the Social Vulnerability Index (SoVI®) (Cutter et al. 2003). SoVI® scores in Florida range from -7.42 (Monroe County) to + 6.61 (Glades County). The SoVI® index is compiled across the United States and incorporates sociometric variables that impact the ability of a community to prepare and respond to disasters- details can be found on their website: www.sovius.org. In the

FPHRAT SoVI® scores were converted to a number in the range of 0 to 4 where 0 is low vulnerability and 4 is high vulnerability.

Critical Infrastructure and Key Resources (1-2)

Currently there is insufficient data calculate the Critical Infrastructure and Key Resources (CIKR). Therefore, in the FPHRAT, all values are set to one (1).

Impact

Impact on health was calculated using pre-populated information and is the sum of the ***Public Health Impact***, ***Healthcare Impact***, and ***Behavioral Health Impact***. Scores can range from 0 to 12. This score is calculated for each of the 36 hazards and is constant for all counties.

a. Public Health Impact (PHI) Score (1-4)

PHI is calculated from the harmonic mean for each Indicator. These means were converted to normalized means on a scale of 0 to 4. These values were then summed and divided by the y-intercept .

Equation of PHI for PHRAT

$$Public\ Health\ Impact = (\sum IMR + PE + PS + PRI + PRMC + PHRCI + PRMD + PRLHTM + PWTFE + PFSEE + PILSTT)/\frac{1}{Y\ Interecpt}\ or\ 10.015$$

Where:

(*IMR*) - Incident Mortality Rate (per 1000)

(PS) – Number of people requiring a public shelter (per 1000)

(*PE*) – Number of people evacuating (per 1000)

(*PSIP*) - Number of people sheltering in place (per 1000)

(*PRI*) - Number of people requiring immunization (per 1000)

(*PRMC*) - Number of people requiring medical countermeasures (per 1000)

(*PHRCI*) - Number of health related case investigations (per 1000)

(*PRMD*) - Number of people requiring mass decontamination (per 1000)

(*PRLTHM*) - Number of people requiring long-term health monitoring (per 1000)

(*PWTFE*) - Percentage of water treatment facilities affected (%)

(*PFSEE*) - Percentage of food service establishments affected (%)

(PILSTT) - Increase in clinical laboratory samples for testing (%)

y-intercept - $\Delta y \ is$ 4 (4-0) and $\Delta x \ is$ the maximum value of x (43.93) minus the minimum value of x (0). In this case slope (m) is less than 1 (m=0.09985) leading to a re-arrangement of the formula y=mx using the reciprocal to y=x/(1/m) leading to a final equation y=x/10.015 (1/m=1/0.09985=10.015).

b. Healthcare Impact (HI) Score (1-4)

HI is a weighted composite score based on normalized harmonic means for the following survey derived impact data. Individual hazard impact indicators are weighted based on scheme developed by the City of Houston Department of Health and Human Services.

$$Healthcare\ Impact = \frac{(IMR * 0.4) + (HR * 0.3) + (IOTC * .05) + (PD * 0.1) + (MD * 0.1) + (ICLT * .05)}{slope\ or\ 1.6618075785}$$

Where:

(IRM) = Standardized (0-4) Incident Morbidity Rate (Number of people becoming ill or injured) (per 1000)

(HR) = Standardized (0-4) Hospitalization Rate (Number of people requiring hospitalization) (per 1000)

(IOTC) = Standardized (0-4) Increase in OTC/Pharmacy Purchases (%)

(PD) = Standardized (0-4) Number of people requiring dialysis stations due to hazard (per 1000)

(MD) = Standardized (0-4) Number of people requiring mass decontamination (per 1000)

(ICLT) = Standardized (0-4) Increase in clinical laboratory samples for testing (%)

Slope - is 4 (4-0) and $\Delta x \ is$ the maximum value of x (3.43) minus the minimum value of x (0). In this case slope (m) since slope is > 1 (m=1.166187058) no transformation using y-intercept was utilized.

c. Behavioral Impact (BI) Score (1-4)

BI is a composite score based on the harmonic means for the following survey derived impact data.

$$Behavioral\ Impact = PRPB + PRMMPM + CMHA + PRI + PRLSAP$$

Where:

(PRPB) - Standardized (0-4) number of people requiring psychiatric beds.

(PRMMPM) - Standardized (0-4) number of people requiring methadone maintenance or psychotropic medications.

(CMHA) - Standardized (0-4) number of call to local mental health authority.

(PRI) - Standardized (0-4) number of people requiring intervention.

(PRLSAP) - Standardized (0-4) number of people requiring a licensed substance abuse provider.

Hazard Risk Index Score (0-24)

The hazard risk index score is based on data pre-populated in the FPHRAT.

$$Hazard\ Risk\ Index =$$

$$Probability\ score * Vulnerability\ score * CIKR\ score * \sum(PHI + HI + BI)/10$$

Theoretical values for hazard risk can be as high as 48 ([(5 × 4 × 2 × (4 + 4 + 4))/10] = [480/10] = 48). In version 1.1 of FPHRAT the CIKR is fixed at 1 so the maximum score is cut in half and is 24.

Capabilities Index Score (1-4)

Scores for the capability preparedness index can range from 1 to 4 and are based on a series of calculations as described below.

4= Full ability / capability:

All of the tasks associated with this function can be performed even if continued resources may be required to sustain this level of performance. Evidence is readily available documenting the ability to perform this function.

3= Substantial ability / capability:

Most of the tasks associated with this function can be performed but a few program gaps or challenges remain. These remaining gaps are minor in nature and there is a resource plan developed to fill these gaps. The ability to perform this function is well established and stable.

2= Partially ability / capability:

Some of the tasks associated with this function can be performed but important program gaps or challenges remain. Remaining program gap areas are identified and a resource plan to fill these gaps is developed but not yet fully implemented

1= Limited or no ability / capability:

No or only preliminary efforts and plans are underway for this function. Required activities related to this function are identified and an action plan may be developed. Few, if any, of the tasks associated with this function can be performed. ess than Capable: less than 25% of needed resources accessible.

CDC Capabilities are composed of 15 general preparedness categories, each containing several functions. The tool accepts user input to evaluate these capabilities at the function level. The capabilities and their functions are then weighted according to relevance to each of 36 hazards and evaluated as described below.

Function Assessments, C_iF_j = function scores for each capability, where capability number i = 1 to 15 and function number j = 1 up to 6 (7 for healthcare capabilities). These are a measure of how well each capability function can be performed, without considering the hazard that initiated the response.

Jurisdiction's Assessment Score for Capabilities is scored using CDC Public Health Preparedness Capabilities Assessment, defined as follows:

5=Full Ability/Capability

4=Significant Ability/Capability

3=Some Ability/Capability

2=Limited Ability/Capability

1= No Ability/Capability

Capability Status, C_iS $(\sum_{J=1}^{J\leq 6} C_iF_j)/j$ = Average of function assessments for each capability.

Function involvement, C_iI_j = 0 for not involved or 1 for involved. This is a pre-populated yes/no evaluation of each capability function's relevance to a hazard response.

Relative Intensity of Engagement, C_iE = 0 to 4 for each capability and hazard. Another measure of public health relevance of a capability to a hazard response, defined as follows

0 = very limited intensity level of this Public health preparedness capability engagement for this hazard

1 = Low intensity level

2 = Moderate intensity level

3 = High and intensity level

4 = Extreme intensity level

Capability Hazard Component is the sum of Relative Intensity Engagement and *Average Function Involvement*,

Average Function Involvement, $C_iH_k = CiE + ((\sum_{J=1}^{J\leq 6} C_iF_j)/j)$

This is an overall measure of the relevance of a capability to a hazard response; i.e., fatality management is more relevant to nuclear attack than air quality. 0 to 5 for each capability, *Ci* and each hazard, *H k..*

Each capability is evaluated for:

***Hazard Risk Weighting*,** Qi = $\sum_{k=1}^{37} C_iH_k$ X *Rk* is the *Hazard Risk Index* for each hazard; this pushes the following scores into the hundreds due to summing 36 hazard elements.

Hazard Risk Weighted Capability Goal = *5Qi.* Maximum weighted score. Used on the Capability Gap Chart.

Hazard Risk Weighted Capability Assessment = C_iH_k X Q_i *Capability Hazard Component* weighted score. Used on the Capability Gap Chart.

Hazard Component Weighted Capability Assessment is the Capability Status divided by the goal of 5 points. It is not displayed but is a Capability Gap Graph sort option.

Each hazard is evaluated for:

Preparedness %. The sum of the product of *Capability Hazard Component* and *Capability Status* for each capability divided by the sum of the Capability Hazard Components for each capability multiplied by the goal of 4 points.

In equation form: PrepPct = $\sum_{i=1}^{15} CiHk * CiS / \sum_{i=1}^{15} 5CiHk$

This is the ratio of capability to goal for each hazard weighted for relevance expressed as a percentage. **Capabilities Preparedness Index** is the above percentage normalized for the 1 to 4 scale. This is the score that is presented on the risk assessment sheet as part of mitigation.

Resources Index Score (1-4)

Public Health resources available to respond are scored by hazard by each jurisdiction and entered into the tool. Scores range from 1 to 4 and are defined as follows:

4= Fully in place: 76%-100% of needed resources accessible

3= Substantially in place: 51%-75% of needed resources accessible

2= Partially in place-25%: 50% of needed resources accessible

1= Less than Partially in place: less than 25% of needed resources accessible

Community Resilience Score (1-4)

Community Resilience was pre-populated and is based on the Baseline Resilience Indicators for Counties (BRIC) created by the Hazards and Vulnerability Research Institute (Cutter et al, 2010). Community resilience scores range from a low of 1.75 (Glades County) to a high of 2.03 (Pinellas County). Resilience scores were normalized between 1 – 4 for computational purposes. Score development is a composite of indicators characterizing the following categories affecting community resilience to disasters:

1. *Social Resilience*
2. *Economic Resilience*
3. *Institutional Resilience*
4. *Infrastructure Resilience*
5. *Community Capital*

Residual Risk Index

Residual risk scores incorporate both pre-populated information and information provided by jurisdictions. The residual risk score incorporated the mitigation factors present in jurisdictions and is represented by the CDC PHP Capabilities Assessment and resources scores.

Residual Risk = (Hazard Probability * Severity of Consequences) / Mitigation

Severity of Consequences

Severity of consequences factors the population vulnerability and impact on health, both pre-populated elements of the FPHRAT.

Severity of Consequences = Population Vulnerability × Impact on Health

Mitigation

Mitigation is the sum of three elements: Capability to Respond, Available Resources, and Community Resilience. Theoretically, the score can range from 3 to 12.

Mitigation = Capability Preparedness Index + Available Resources + Community Resilience